

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** FW: Contact met mevrouw 5.1.2.e  
**Datum:** donderdag 17 juni 2021 10:26:29

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Met groet, 5.1.2.e

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**Van:** 5.1.2.e ) 5.1.2.e @igj.nl>  
**Verzonden:** maandag 14 juni 2021 10:23  
**Aan:** 5.1.2.e 5.1.2.e) <5.1.2.e @igj.nl>  
**Onderwerp:** FW: Contact met mevrouw 5.1.2.e

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**Van:** 5.1.2.e  
**Verzonden:** maandag 7 juni 2021 10:59  
**Aan:** 'info@iszw.nl' <[info@iszw.nl](mailto:info@iszw.nl)>  
**Onderwerp:** Contact met mevrouw 5.1.2.e

Goedemorgen collegae,

Wij als IGJ hebben een melding over een laboratorium voor covid-19 PCR testen binnen gekregen, 5.1.2.i

Wij hebben eerder contact gehad met mevrouw 5.1.2.e van uw inspectie Buiten reikwijdte van het verzoek. Graag zou ik contact hebben met een collega van u die betrokken is bij 5.1.2.i

Ik hoor graag van u.

MvG

dr. 5.1.2.e  
5.1.2.e

.....  
**Netwerkzorg en Preventie**  
**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
 Stadsplateau 1 | 3521 AZ Utrecht  
 Postbus 2518 | 6401 DA Heerlen

.....  
 T 088 120 5000  
 M 06 5.1.2.e  
 5.1.2.e @igj.nl  
<https://www.igi.nl>

Duidelijk. Onafhankelijk. Eerlijk.

**Van:** 5.1.2.e  
**Aan:** [contact@inspectieszw.nl](mailto:contact@inspectieszw.nl)  
**Onderwerp:** Inspectiebezoek\_Melding  
**Datum:** donderdag 24 juni 2021 09:34:00

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Beste ISZW,

Zie email hieronder. Ik probeer contact te krijgen met iemand binnen het ISZW die mij verder kan helpen met onderstaan de casus.

Kunt u mij verder helpen?

Alvast bedankt.

Met vriendelijke groeten,

5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518 | 6401DA | Heerlen | Nederland  
.....

T +31 (0)88 1205000  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)  
.....

**Duidelijk. Onafhankelijk. Eerlijk.**  
.....

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**Van:** 5.1.2.e

**Verzonden:** woensdag 23 juni 2021 11:13

**Aan:** 5.1.2.e @InspectieSZW.nl>

**Onderwerp:** Inspectiebezoek\_Melding

Beste 5.1.2.e

Mijn naam is 5.1.2.e . Vanuit de IGJ heb ik uw naam doorgekregen als mogelijk contact.

Ik weet niet of u hier de juiste persoon voor bent en mij intern verder kan helpen.

Het gaat om onderstaande casus/melding over 5.1.2.i

Wij zijn van mening dat een gedeelte onder ons toezicht valt maar er ook meer Arbo gerelateerde zaken bij zitten die onder het toezicht van de ISZW vallen.

**Casus**

5.1.2.i





5.1.2.i

5.1.2.i

Kunt u mij hierbij intern verder helpen?

Graag hoor ik van u

Met vriendelijke groeten,

5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**[Inspectie Gezondheidszorg en Jeugd](#)**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518 | 6401DA | Heerlen | Nederland

.....  
T +31 (0)88 1205000  
[meldpunt@igi.nl](mailto:meldpunt@igi.nl)  
[www.igi.nl](http://www.igi.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Inspectiebezoek\_Melding  
**Datum:** maandag 28 juni 2021 08:03:31

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Beste 5.1.2.e,

Allereerst mijn excuses dat u zo lang op antwoord heeft moeten wachten. Ik ben inderdaad de juiste persoon hoor, alleen had ik afgelopen week een aantal opleidingsdagen, waardoor ik mijn mail niet goed heb kunnen bijhouden. In het vervolg, bel gerust hoor dan ga ik gelijk aan de slag.

Ik heb inmiddels ook gezien dat u de melding heeft doorgestuurd naar onze Frontoffice. Wij gaan nu met de melding aan de slag, want er zitten inderdaad een aantal elementen in de melding welke op ons terrein vallen. Willen jullie dat we als organisaties afzonderlijk van elkaar een inspectie doen of gezamenlijk, want die mogelijkheid is er natuurlijk ook. Zou u me dat kunnen laten weten? Ik hoor het graag!

Met vriendelijke groet,

5.1.2.e  
5.1.2.e

.....  
**M&M/Vakgroep ARBO**  
**Inspectie SZW**  
**Ministerie van Sociale Zaken en Werkgelegenheid**  
Croeselaan 15 | Utrecht

.....  
**Tel:** +31(0)5.1.2.e  
**Email:** 5.1.2.e @inspectieSZW.nl  
<https://www.inspectieszw.nl>

.....  
5.1.2.e

# Dubbel met doc 2

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** Re: Inspectiebezoek Pure Medical Vlaardingen op 14-7-2021 14:00  
**Datum:** dinsdag 13 juli 2021 12:45:14

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Beste 5.1.2.e,

Hierbij bevestigen wij dat we de mail in goede orde hebben ontvangen.

Wij heten jullie morgen van harte welkom om 14:00 uur op ons lab.

Met vriendelijke groet,

5.1.2.e  
5.1.2.e



Pure Medical

+31 (0)5.1.2.e

<https://www.puremedical.world/>

On Tue, 13 Jul 2021 at 12:33, 5.1.2.e <5.1.2.e@igi.nl> wrote:

Geachte heer 5.1.2.e

Zoals zojuist telefonisch met uw collega besproken wil de Inspectie Gezondheidszorg en Jeugd (hierna: de inspectie) n.a.v. een melding graag het laboratorium van Pure Medical (PGL Finance B.V.) bezoeken.

Mijn collega 5.1.2.e 5.1.2.e en ikzelf zullen woensdagmiddag 14-7-2021, 14:00 de locatie aan de Olivier van Noortlaan 120, Vlaardingen bezoeken.

Het is prettig als degene die ons te woord staat ons kan informeren over de SARS-CoV2 PCR test die aangeboden op uw website: <https://www.puremedical.world/pcr-laboratory-Analysis>

Tijde het bezoek ontvangen wij graag informatie over:

- het proces (pre en post analyse, transport),
- kwaliteitssysteem/kwaliteitsborging
- te volgen interne procedures.

Verder ontvangen wij graag uw bevestiging op dit verzoek.

Ik hoop u hiermee voldoende geïnformeerd te hebben.

Alvast bedankt en tot morgen.

Met vriendelijke groeten,

5.1.2.e

5.1.2.e

.....

**afdeling medische technologie, team meldingen**

[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

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.....

T +31 (0)88 1205000

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[www.igj.nl](http://www.igj.nl)

Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

.....

**Duidelijk. Onafhankelijk. Eerlijk.**

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# Inzien uittreksel - PGL Finance B.V. (27352865)

Kamer van Koophandel, 13 juli 2021 - 11:24

**KvK-nummer** 27352865

**De onderneming / organisatie wil niet dat haar  
adresgegevens worden gebruikt voor ongevraagde  
postreclame en verkoop aan de deur.**

## Rechtspersoon

RSIN	821195517
Rechtsvorm	Besloten Vennootschap
Statutaire naam	PGL Finance B.V.
Statutaire zetel	Bleiswijk
Eerste inschrijving handelsregister	08-09-2009
Datum akte van oprichting	02-09-2009
Datum akte laatste statutenwijziging	07-03-2016
Geplaatst kapitaal	EUR 18.020,00
Gestort kapitaal	EUR 18.020,00
Deponering jaarstuk	De jaarrekening over boekjaar 2018 is gedeponeed op 29-06-2020. De jaarrekening is niet vastgesteld.

## Onderneming

Handelsnamen	PGL Finance B.V. Pure CBD Solutions Pure Medical
Startdatum onderneming	02-09-2009
Activiteiten	SBI-code: 46462 - Groothandel in medische en tandheelkundige instrumenten, verpleeg- en orthopedische artikelen en laboratoriumbenodigdheden SBI-code: 70101 - Concerndiensten binnen eigen concern SBI-code: 8211 - Brede administratieve dienstverlening SBI-code: 86924 - Medische laboratoria, trombosediensten en overig behandelingsondersteunend onderzoek
Werkzame personen	2

## Vestiging

Vestigingsnummer	<u>000017743737</u>
Handelsnamen	PGL Finance B.V. Pure CBD Solutions Pure Medical
Bezoekadres	Bieslandseweg 2, 2645BM Delfgauw
Datum vestiging	02-09-2009

## Activiteiten

SBI-code: 46462 - Groothandel in medische en tandheelkundige instrumenten, verpleeg- en orthopedische artikelen en laboratoriumbenodigdheden  
SBI-code: 70101 - Concerndiensten binnen eigen concern  
SBI-code: 8211 - Brede administratieve dienstverlening  
SBI-code: 86924 - Medische laboratoria, trombosediensten en overig behandelingsondersteunend onderzoek  
Logistieke begeleiding bij wetenschappelijk onderbouwde gezondheidsadviezen op maat en daarmee verband houdende commerciële activiteiten, zoals verkoop van vitaminen/voedings-supplementen, handelen als betaalkantoor, begeleiden van de financiën en het verrichten van alle daarmee verband houdende promotionele en marketing activiteiten, concerndiensten binnen eigen concern, brede administratieve dienstverlening. Medisch: verkoop van diagnostische en lifestyle gerelateerde genetische analyses. Verkoop van medische en lifestyle gerelateerde CBD oplossingen. Laboratorium werkzaamheden.

## Werkzame personen

2

**Bestuurder**

Naam

5.1.2.e

Geboortedatum

5.1.2.e

Datum in functie

5.1.2.e

Titel

5.1.2.e

Bevoegdheid

Alleen/zelfstandig bevoegd

Gegevens zijn vervaardigd op 13-07-2021 om 11.24 uur.

# Inzien uittreksel - 5.1.2.e

## Beheer B.V. (50071912)

Kamer van Koophandel, 13 juli 2021 - 11:31

**KvK-nummer** 50071912

Deze onderneming heeft geen vestiging in Nederland.

**De onderneming / organisatie wil niet dat haar adresgegevens worden gebruikt voor ongevraagde postreclame en verkoop aan de deur.**

### Rechtspersoon

RSIN	822529579
Rechtsvorm	Besloten Vennootschap
Statutaire naam	5.1.2.e Beheer B.V.
Statutaire zetel	Bleiswijk
Eerste inschrijving handelsregister	01-06-2010
Datum akte van oprichting	28-05-2010
Datum oprichting	29-05-2010
Geplaatst kapitaal	EUR 18.000,00
Gestort kapitaal	EUR 18.000,00
Deponering jaarstuk	De jaarrekening over boekjaar 2014 is gedeponeed op 14-06-2015.

### Onderneming

Handelsnaam	Maarten A. van Dijk Beheer B.V.
Startdatum onderneming	29-05-2010
Activiteiten	SBI-code: 70102 - Holdings (geen financiële)
Werkzame personen	0

### Vestiging

Vestigingsnummer	<u>000000128449</u>
Handelsnaam	Maarten A. van Dijk Beheer B.V.
Bezoekadres	Robin Hill Warren Lane, KT22 OST Oxshott Leatherh, Verenigd Koninkrijk
Datum vestiging	29-05-2010 (datum registratie: 01-06-2010)
Activiteiten	SBI-code: 70102 - Holdings (geen financiële) Houdster- en financieringsactiviteiten
Werkzame personen	0

### Enig aandeelhouder

Naam	PGL Finance B.V.
Bezoekadres	Bieslandseweg 2, 2645BM Delfgauw
Ingeschreven onder KvK-nummer	<u>27352865</u>
Enig aandeelhouder sedert	17-12-2010 (datum registratie: 22-12-2010)

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**Bestuurder**

Naam	5.1.2.e
Geboortedatum	5.1.2.e
Datum in functie	5.1.2.e )
Titel	5.1.2.e
Bevoegdheid	Alleen/zelfstandig bevoegd

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Gegevens zijn vervaardigd op 13-07-2021 om 11.32 uur.



# Concernrelaties - PGL Finance B.V. (27352865)

Kamer van Koophandel, 11-7-2021

**100 %**

Enig aandeelhouder



Bestuurder



Aansprakelijkheid

**Naam**

**PGL Finance B.V.**

**Plaats**

Delfgauw

**KvK-nummer**

27352865

| ..... **100 %** Maarten A. van Dijk Beheer B.V.

KT22 OST Oxshott Leatherh

50071912

# Buiten reikwijdte van het verzoek

**Van:** 5.1.2.e @gmail.com <5.1.2.e @gmail.com>

**Verzonden:** dinsdag 3 augustus 2021 17:24

**Aan:** 5.1.2.e @igj.nl>

**CC:** 5.1.2.e @puregeneticlifestyle.com>

**Onderwerp:** Afwerking inspectie rapport

Mijne Heren,

Uw op 14-7 een bezoek gebracht aan ons laboratorium naar aanleiding van een klacht. U heeft geconstateerd dat onze werkwijze in orde was. U had een aantal vragen cq opmerkingen.

Hier onder en in de bijlagen vindt u het antwoord.


- Veiligheidsbril. De veiligheidsbrillen zijn besteld en worden gedragen.
- Oogdouches zijn besteld en zijn geïnstalleerd op het laboratorium.
- Het hergebruik van lekke buizen. Dit wordt niet meer uitgevoerd.
- Novogenia. Zoals gezegd wij maken gebruik van het referentie lab Novogenia. Een gerenommeerd lab. Dat ISO 15189 geaccrediteerd is. ( Zie bijlage ) .
- Als transport materiaal gebruiken van het transportmateriaal van Bio-echo. Dit transport materiaal inactieveert het virus ( Zie bijlage )
- Het protocol voor schoonmaken van de werkbladen is aangepast. (Zie bijlage ). Nadrukkelijk wil ik hierbij stellen dat de analisten hun eigen werkbladen moeten schoonhouden.
- Een RIE : in het kader van onze eigen ISO 15189 accreditatie gaan we een eigen RIE houden. Zie planning audits ( bijlage ).

- Uw heeft gevraagd naar de meldingsplicht in het kader van de wet infectie preventie. De aanvragen worden uitgevoerd in opdracht van de GGD. Alle uitslagen komen bij de GGD terecht zodat wij niet nog apart hoeven te melden. (Zie hiervoor bijlage.)

Hopende u hiermee voldoende te hebben geïnformeerd,

Met vriendelijke groet,

**5.1.2.e**

	<b>SOP - Laboratory Cleaning &amp; Disinfection</b>	Page 1 of 1
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**Purpose:**

To provide a daily clean workbench in the laboratory.

**Interested Parties:**

Team leaders and lab assistants

**Definitions:**

- a. IPA: Isopropyl alcohol
- b. BSC: biological safety cabinet
- c. Non-disposable equipment: laptop, multichannel pipette, 3D-printed moulds.

**Responsibility:**

Every laboratory worker is responsible for cleaning his/her workbench after the work is done. Clean and disinfect work surfaces and non-disposable equipment before and after any activity, and when a possible contamination is detected.

**Procedure:**

- a. Wear gloves before cleaning and disinfecting any surface.
- b. Prepare and organize the workplace to facilitate cleaning and disinfection
- c. Take paper towels and spray a generous amount of IPA (80%) to disinfect the work area. **Note:** Alternatively, spray directly on contaminated surface and use multiple paper towels to clean and remove contaminants.
- d. Clean the surface of the BSC/workbench
- e. Use dry paper towels to remove excess liquid

**Non-disposable Equipment**

- f. Spray IPA (80%) on a dry paper towel and wipe the high-touch surfaces on the device. **Note:** Do not spray IPA directly on the piece of equipment!
- g. Dry the device using a dry paper towel
- h. Inspect the equipment for remaining smudges and repeat the cleaning procedure



# Die **VALIDIERUNG**

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Generelle Informationen  
zur Validierung

## **ZIEL DER VALIDIERUNG**

Das Ziel der Validierung ist die analytische Sensitivität und Spezifität von 4 verschiedenen Analysesystemen für das SARS-CoV-2 Virus zu ermitteln.

## **ABLAUF**

91 Proben, bestehend aus bekannt positiven Proben, Personen ohne Symptomen und Ringversuch-Proben von INSTAND wurden für die Labormitarbeiter anonymisiert und auf gleiche Weise mit allen 4 Systemen analysiert. Die Ergebnisse wurden ausgewertet und die Sensitivität und die Spezifität wurde ermittelt.

## **ANALYSESYSTEME**

Folgende Analysesysteme wurden zur Validierung herangezogen:

- Phoenix DX SARS-COV-2 (CE-IVD, Procomcure)
- Realquality SARS-COV-2 (CE-IVD, AB Analitica)
- RIDAGENE SARS-CoV-2 RUO (RESEARCH USE, r-biopharm)
- Phoenix DX SARS-COV-2 (RESEARCH USE, Procomcure)

# Die PROBEN

## POSITIVE PROBEN

7

Positive Proben wurden von anderen Institution für den Zweck der Validierung gespendet. Diagnose der Proben wurde extern durch diverse Systeme nachgewiesen (Phoenix-DX CE-IVD, Roche Cobas). Manche der Proben wurden bereits als RNA geliefert.

## NEGATIVE PROBEN

77

Negative Proben wurden von Personen gesammelt, die bisher keine Symptome ausgewiesen haben (jedoch potenziell asymptomatisch).

## RINGVERSUCH-PROBEN

13

Ringversuch - Proben bestehend aus positiven und negativen Proben wurden von INSTAND zur Verfügung gestellt.

Novogenia hatte keine Information zum Status der einzelnen Proben.

# Die **ANALYSESYSTEME**



## ANALYSEKIT 1

### CE-IVD

PhoenixDx® 2019-nCoV  
RNA Detection Kit  
(PCCSKU15259,  
Procomcure Biotech)

<https://shop.procomcure.com/product/phoenixdx-2019-ncov-rna-detection-kit/>

## ANALYSEKIT 2

### CE-IVD

REALQUALITY RQ-2019-  
nCoV  
(RQ-129, AB Analitica)

<https://www.abanalitica.com/en/catalogo/product/realquality-rq-2019-ncov/>

## ANALYSEKIT 3

### RESEARCH USE ONLY

RIDA®GENE SARS-CoV-  
2 RUO (r-biopharm,  
PG6815RUO)

<https://clinical.r-biopharm.com/products/ridagene-sars-cov-2-ruo/>

## ANALYSEKIT 4

### RESEARCH USE ONLY

PhoenixDx® 2019-nCoV  
RESEARCH RNA  
Detection Kit  
(Procomcure Biotech)

<https://shop.procomcure.com/product/phoenixdx-2019-ncov-rna-detection-kit/>



# Die **GERÄTE**

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Technische Ausrüstung,  
die für diese Validierung  
angewendet wurde.

## **RNA-EXTRAKTION**

Proben wurden mit dem „Quick-RNA Viral Kit“ (R1035, Zymo Research) extrahiert und auf 60µl eluiert, um ausreichend Material für alle Validierungen zu ermöglichen. Alle Validierungen wurden aus diesem identischen Probenpool entnommen und analysiert.

## **RINGVERSUCH-PROBEN**

Proben des Ringversuches wurden von INSTAND lyophilisiert geliefert. Diese wurden mit TE-Buffer rekonstituiert und ebenfalls als Pool für die Analysen verwendet.

## **LIQUID HANDLING**

Sämtliche Pipettierprozesse wurden automatisiert durchgeführt. Das Gerät, das dafür verwendet wurde war ein Qiagen Biorobot Universal. Analysen wurden in 384 Well Platten durchgeführt, da diese in Vorversuchen mit einem 10µl Volumen bei dem PhoenixDX die mit Abstand besten Ergebnisse geliefert hat.

## **REALTIME PCR**

Die Real Time PCR wurde mit dem Gerät Vii7 von ThermoFisher durchgeführt.

## **AUSWERTUNG**

Die Auswertung der Rohdaten wurde von 2 in der real time PCR Analytik erfahrenen Genetikern unabhängig durchgeführt und anschließend verglichen. Es kam zu keinen Diskrepanzen bei der Auswertung.

# Die ERGEBNISSE

## Vergleich der Ergebnisse

	KORREKT NEGATIVE	FALSCH NEGATIVE	KORREKT POSITIVE	FALSCH POSITIVE	SPEZIFIZITÄT	SENSITIVITÄT
PhoenixDX <b>CE-IVD</b>	77	0	14	0	100.0%	100.0%
PhoenixDX <b>RESEARCH</b>	76	1	13	0	100.0%	98.7%
REALQUALITY <b>CE-IVD</b>	76	1	13	0	100.0%	98.7%
RIDA Gene <b>RESEARCH</b>	77	0	14	0	100.0%	100.0%

## ERGEBNIS

Unser bevorzugter Kit: Procomcure Phoenix CE-IVD lieferte die besten Ergebnisse unter den CE-IVD Kits mit 100% Sensitivität und 100% Spezifität. Dieser Kit war auch der einzige, der anhand der internen Kontrolle feststellen konnte, dass Proben aus Ringversuchen, die aus Zellkulturen extrahiert wurden keine normalen Abstriche waren.

Eine eben so gute Performance lieferte der RIDA Gene Research use only Kit, der aber nicht CE-IVD Zertifiziert ist. Es fehlt auch die interne Kontrolle anhand menschlicher RNA, um die Integrität der Probe zu prüfen.

## ZUSAMMENFASSUNG

Der PhoenixDX CE-IVD Kit von Procomcure ist sehr leistungsstark und wies die höchste Genauigkeit in unserer Validierung auf. Selbst bei alleiniger Auswertung des E-Gens ohne der zusätzlichen Auswertung des R-Gens ergibt der Kit eine 100% Sensitivität und Spezifität.

PROBE	HERKUNFT	CE-IVD	RESEARCH	CE-IVD	RESEARCH
		PHOENIX IVD	PHOENIX RESEARCH	REALQUALITY	RIDA
1		NEGATIV	NEGATIV	NEGATIV	NEGATIV
2		NEGATIV	NEGATIV	NEGATIV	NEGATIV
3		NEGATIV	NEGATIV	NEGATIV	NEGATIV
4		NEGATIV	NEGATIV	NEGATIV	NEGATIV
5		POSITIV	NEGATIV	POSITIV	POSITIV
6	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	POSITIV	NEGATIV	POSITIV
11	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
12	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
14		NEGATIV	NEGATIV	NEGATIV	NEGATIV
15		NEGATIV	NEGATIV	NEGATIV	NEGATIV
16		NEGATIV	NEGATIV	NEGATIV	NEGATIV
17		NEGATIV	NEGATIV	NEGATIV	NEGATIV
18		NEGATIV	NEGATIV	NEGATIV	NEGATIV
19		NEGATIV	NEGATIV	NEGATIV	NEGATIV
20		NEGATIV	NEGATIV	NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
24		NEGATIV	NEGATIV	NEGATIV	NEGATIV
25		NEGATIV	NEGATIV	NEGATIV	NEGATIV
26		NEGATIV	NEGATIV	NEGATIV	NEGATIV
27		NEGATIV	NEGATIV	NEGATIV	NEGATIV
28		NEGATIV	NEGATIV	NEGATIV	NEGATIV
29		NEGATIV	NEGATIV	NEGATIV	NEGATIV
30		NEGATIV	NEGATIV	NEGATIV	NEGATIV

Probe 5 wurde 15 Tage bei Raum Temperatur gelagert und hatte eine geringe Virenlast. Diese Probe wurde von PhoenixDX nicht richtig erkannt.

Probe 10 stammt aus einer Zellkultur im Ramen eines Ringversuches und wurde von REALQUALITY nicht richtig erkannt.

PROBE	HERKUNFT	CE-IVD	RESEARCH	CE-IVD	RESEARCH
		PHOENIX IVD	PHOENIX RESEARCH	REALQUALITY	RIDA
31		NEGATIV	NEGATIV	NEGATIV	NEGATIV
32	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
33	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
34		NEGATIV	NEGATIV	NEGATIV	NEGATIV
35		NEGATIV	NEGATIV	NEGATIV	NEGATIV
36		NEGATIV	NEGATIV	NEGATIV	NEGATIV
37		NEGATIV	NEGATIV	NEGATIV	NEGATIV
38	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
39	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
40	RNA delivered	POSITIV	POSITIV	POSITIV	POSITIV
41	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
42		NEGATIV	NEGATIV	NEGATIV	NEGATIV
43		NEGATIV	NEGATIV	NEGATIV	NEGATIV
44		NEGATIV	NEGATIV	NEGATIV	NEGATIV
45		NEGATIV	NEGATIV	NEGATIV	NEGATIV
46		NEGATIV	NEGATIV	NEGATIV	NEGATIV
47		NEGATIV	NEGATIV	NEGATIV	NEGATIV
48		NEGATIV	NEGATIV	NEGATIV	NEGATIV
49		POSITIV	POSITIV	POSITIV	POSITIV
50	RNA delivered	POSITIV	POSITIV	POSITIV	POSITIV
51	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
52		NEGATIV	NEGATIV	NEGATIV	NEGATIV
53		NEGATIV	NEGATIV	NEGATIV	NEGATIV
54		POSITIV	POSITIV	POSITIV	POSITIV
55		NEGATIV	NEGATIV	NEGATIV	NEGATIV
56		NEGATIV	NEGATIV	NEGATIV	NEGATIV
57		NEGATIV	NEGATIV	NEGATIV	NEGATIV
58		NEGATIV	NEGATIV	NEGATIV	NEGATIV
59		NEGATIV	NEGATIV	NEGATIV	NEGATIV
60		NEGATIV	NEGATIV	NEGATIV	NEGATIV

Alle Systeme liefern gleiche Ergebnisse

PROBE	HERKUNFT	CE-IVD	RESEARCH	CE-IVD	RESEARCH
		PHOENIX IVD	PHOENIX RESEARCH	REALQUALITY	RIDA
61		NEGATIV	NEGATIV	NEGATIV	NEGATIV
62		NEGATIV	NEGATIV	NEGATIV	NEGATIV
63		NEGATIV	NEGATIV	NEGATIV	NEGATIV
64		NEGATIV	NEGATIV	NEGATIV	NEGATIV
65		NEGATIV	NEGATIV	NEGATIV	NEGATIV
66		NEGATIV	NEGATIV	NEGATIV	NEGATIV
67	RNA delivered	POSITIV	POSITIV	POSITIV	POSITIV
68	RNA delivered	NEGATIV	NEGATIV	NEGATIV	NEGATIV
69	RNA delivered	POSITIV	POSITIV	POSITIV	POSITIV
70		NEGATIV	NEGATIV	NEGATIV	NEGATIV
71		NEGATIV	NEGATIV	NEGATIV	NEGATIV
72		NEGATIV	NEGATIV	NEGATIV	NEGATIV
73		NEGATIV	NEGATIV	NEGATIV	NEGATIV
74		NEGATIV	NEGATIV	NEGATIV	NEGATIV
75		NEGATIV	NEGATIV	NEGATIV	NEGATIV
76		NEGATIV	NEGATIV	NEGATIV	NEGATIV
77		NEGATIV	NEGATIV	NEGATIV	NEGATIV
78	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
79	RINGVERSUCH	POSITIV	POSITIV	POSITIV	POSITIV
80	RINGVERSUCH	NEGATIV	NEGATIV	NEGATIV	NEGATIV
81		NEGATIV	NEGATIV	NEGATIV	NEGATIV
82		NEGATIV	NEGATIV	NEGATIV	NEGATIV
83		NEGATIV	NEGATIV	NEGATIV	NEGATIV
84		NEGATIV	NEGATIV	NEGATIV	NEGATIV
85		NEGATIV	NEGATIV	NEGATIV	NEGATIV
86		NEGATIV	NEGATIV	NEGATIV	NEGATIV
87		NEGATIV	NEGATIV	NEGATIV	NEGATIV
88		NEGATIV	NEGATIV	NEGATIV	NEGATIV
89		NEGATIV	NEGATIV	NEGATIV	NEGATIV
90		NEGATIV	NEGATIV	NEGATIV	NEGATIV
91		NEGATIV	NEGATIV	NEGATIV	NEGATIV

Alle Systeme liefern gleiche Ergebnisse

# PhoenixDx® 2019-nCoV RNA Detection Kit

**CE-IVD**

**(Procomcure Biotech)**

<https://shop.procomcure.com/produkt/phoenixdx-2019-ncov-rna-detection-kit/>

# Der ANALYSEKIT 1

## HEK KONTROLLE

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

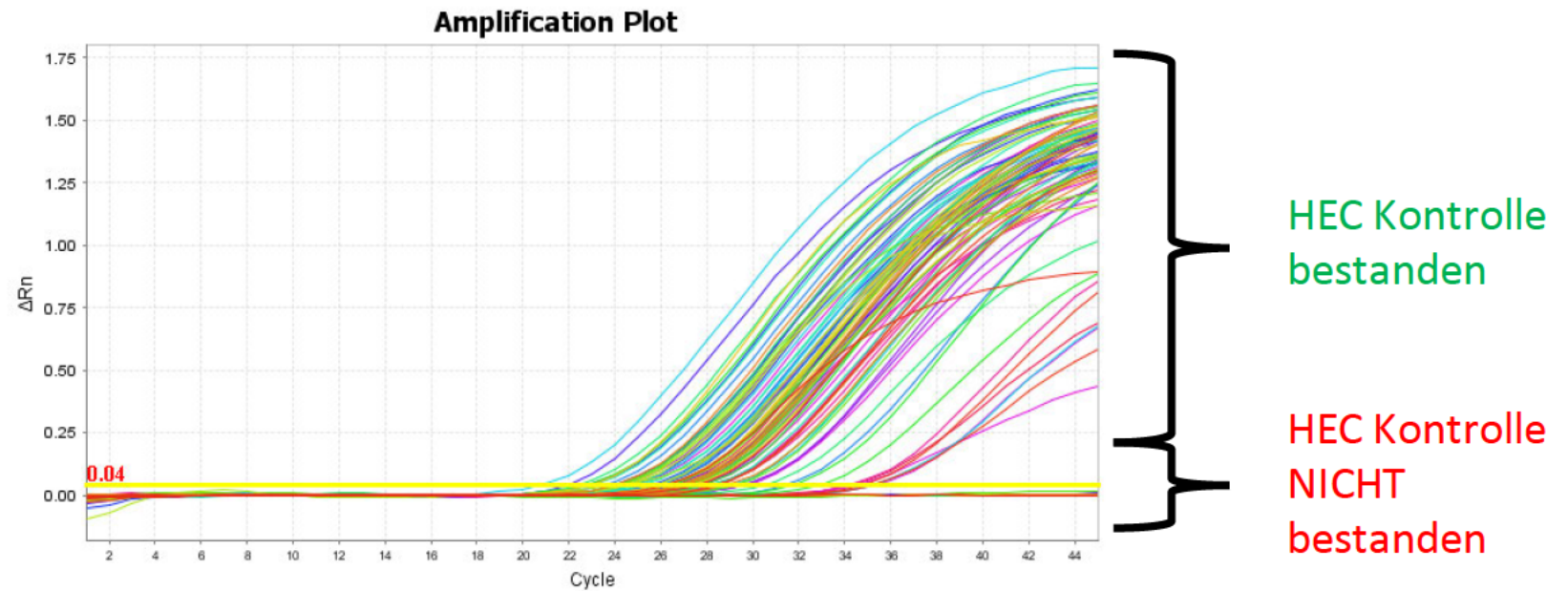
CE-IVD Zertifiziert

## INTERNE QUALITÄTSKONTROLLE

Der PhoenixDX Kit von Procomcure ist unser präferiertes System aufgrund der internen Qualitätskontrolle, die humane RNA nachweist und somit die Qualität der Probe sicherstellt. Ist keine humane RNA in ausreichender Menge nachweisbar, ist die Probe entweder degradiert oder nicht ordnungsgemäß abgenommen worden.

## VORGEHENSWEISE

Sollte die Humane Kontrolle (HEK) keine Amplifikation zeigen, sind die Qualitätskriterien nicht erfüllt und die Probe wird abgelehnt und eine neue Probe angefordert. Da HEC absichtlich sehr empfindlich auf Qualitätsschwankungen ist, ist ein negatives HEC Signal zu ignorieren, wenn ein positives E-Gen Signal geliefert wird. Die Probe ist somit positiv.





# Die ROHDATEN

## HEK KONTROLLE

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

CE-IVD Zertifiziert

PROBE	HERKUNFT	PhoenixDX IVD KONTROLLE
1		PASS
2		PASS
3		PASS
4		PASS
5		PASS
6	RINGVERSUCH	FAIL
7	RINGVERSUCH	FAIL
8	RINGVERSUCH	FAIL
9	RINGVERSUCH	FAIL
10	RINGVERSUCH	FAIL
11	RINGVERSUCH	FAIL
12	RINGVERSUCH	PASS
13	RINGVERSUCH	PASS
14		PASS
15		PASS
16		PASS
17		PASS
18		PASS
19		PASS
20		PASS
21	RNA delivered	PASS
22	RNA delivered	PASS
23	RNA delivered	PASS
24		PASS
25		PASS
26		PASS
27		PASS
28		PASS
29		PASS
30		PASS

PROBE	HERKUNFT	PhoenixDX IVD KONTROLLE
30		PASS
31		PASS
32	RINGVERSUCH	FAIL
33	RINGVERSUCH	FAIL
34		PASS
35		PASS
36		PASS
37		PASS
38	RNA delivered	PASS
39	RNA delivered	PASS
40	RNA delivered	PASS
41	RNA delivered	PASS
42		PASS
43		PASS
44		PASS
45		PASS
46		PASS
47		PASS
48		PASS
49		PASS
50	RNA delivered	PASS
51	RNA delivered	PASS
52		PASS
53		PASS
54		PASS
55		PASS
56		PASS
57		PASS
58		PASS
59		PASS
60		PASS

PROBE	HERKUNFT	PhoenixDX IVD KONTROLLE
61		PASS
62		PASS
63		PASS
64		PASS
65		PASS
66		PASS
67	RNA delivered	FAIL
68	RNA delivered	FAIL
69	RNA delivered	PASS
70		PASS
71		PASS
72		PASS
73		PASS
74		PASS
75		PASS
76		PASS
77		PASS
78	RINGVERSUCH	FAIL
79	RINGVERSUCH	FAIL
80	RINGVERSUCH	PASS
81		PASS
82		PASS
83		PASS
84		PASS
85		PASS
86		PASS
87		PASS
88		PASS
89		PASS
90		PASS
91		PASS

## ERGEBNIS

7 Ringversuch-Proben aus Zellkultur und 2 Positiv-Proben, die als RNA geliefert wurden haben kein ausreichendes HEC Ergebnis geliefert. Da HEC auf menschliche RNA aus Abstrichen optimiert ist, war dies zu erwarten. Die HEC-negative RNA-Proben lieferten Virus-Positive Ergebnisse und konnten somit auch ausgewertet werden.



# Der ANALYSEKIT 1

## E-GEN

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

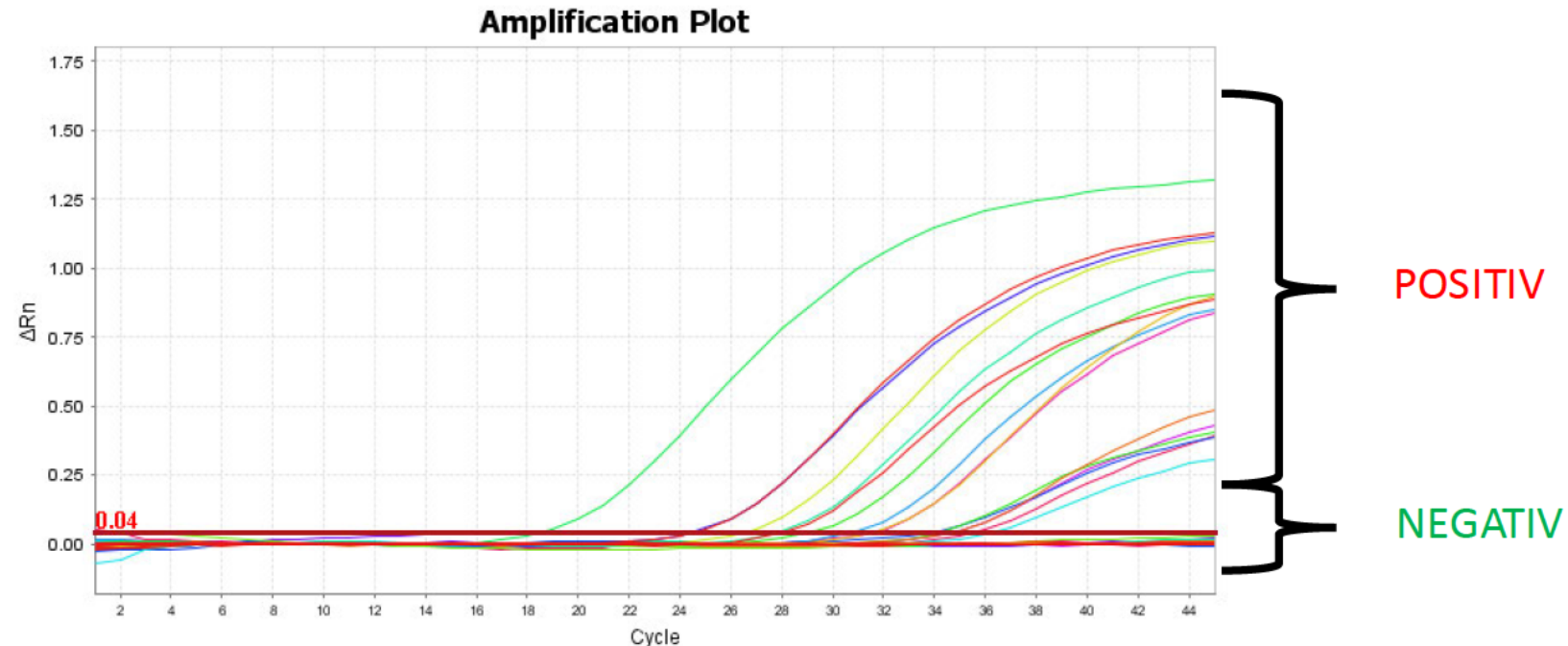
CE-IVD Zertifiziert

## POSITIVES SIGNAL

Der PhoenixDX Kit von Procomcure analysiert 2 Targets im SARS-COV-2 Virus. Das E-Gen und das R-Gen. Laut Bedienungsanleitung des Herstellers ist ein Anstieg von beiden Signalen optimal, aber der Anstieg von nur einem Target eine ebenso aussagekräftige Diagnose für SARS-COV-2. Das E-Gen dieses Kits hat starke und eindeutige Signale geliefert. Negative Proben und Nullkontrollen erzeugten kein Hintergrundsignal.

## VORGEHENSWEISE

Grundvoraussetzung ist ein klares Signal der HEK Kontrolle. Sollte das E-Gen ein positives Signal liefern (Exponentieller Anstieg der Amplifikationskurve) und somit einen CT-Wert erzeugen, der kleiner gleich 36 Zyklen ist, wird diese Probe als positiv ausgegeben. Alle anderen Proben werden als negativ ausgegeben. Ein positives Ergebnis beim E-Gen ist auch bei Ausfall der HEC Kontrolle als positiv auszugeben.



# Die ROHDATAEN

## E-GEN

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

CE-IVD Zertifiziert

PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD PHOENIX IVD	PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD PHOENIX IVD	PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD PHOENIX IVD
1		NEGATIV	NEGATIV	31		NEGATIV	NEGATIV	61		NEGATIV	NEGATIV
2		NEGATIV	NEGATIV	32	RINGVERSUCH	POSITIV	POSITIV	62		NEGATIV	NEGATIV
3		NEGATIV	NEGATIV	33	RINGVERSUCH	NEGATIV	NEGATIV	63		NEGATIV	NEGATIV
4		NEGATIV	NEGATIV	34		NEGATIV	NEGATIV	64		NEGATIV	NEGATIV
5		POSITIV	POSITIV	35		NEGATIV	NEGATIV	65		NEGATIV	NEGATIV
6	RINGVERSUCH	NEGATIV	NEGATIV	36		NEGATIV	NEGATIV	66		NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV	37		NEGATIV	POSITIV	67	RNA delivered	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV	38	RNA delivered	NEGATIV	NEGATIV	68	RNA delivered	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV	39	RNA delivered	NEGATIV	NEGATIV	69	RNA delivered	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	POSITIV	40	RNA delivered	POSITIV	POSITIV	70		NEGATIV	NEGATIV
11	RINGVERSUCH	POSITIV	POSITIV	41	RNA delivered	NEGATIV	NEGATIV	71		NEGATIV	NEGATIV
12	RINGVERSUCH	NEGATIV	NEGATIV	42		NEGATIV	NEGATIV	72		NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV	43		NEGATIV	NEGATIV	73		NEGATIV	NEGATIV
14		NEGATIV	NEGATIV	44		NEGATIV	NEGATIV	74		NEGATIV	NEGATIV
15		NEGATIV	NEGATIV	45		NEGATIV	NEGATIV	75		NEGATIV	NEGATIV
16		NEGATIV	NEGATIV	46		NEGATIV	NEGATIV	76		NEGATIV	NEGATIV
17		NEGATIV	NEGATIV	47		NEGATIV	NEGATIV	77		NEGATIV	NEGATIV
18		NEGATIV	NEGATIV	48		NEGATIV	NEGATIV	78	RINGVERSUCH	POSITIV	POSITIV
19		NEGATIV	NEGATIV	49		POSITIV	POSITIV	79	RINGVERSUCH	POSITIV	POSITIV
20		NEGATIV	NEGATIV	50	RNA delivered	POSITIV	POSITIV	80	RINGVERSUCH	NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV	51	RNA delivered	NEGATIV	NEGATIV	81		NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV	52		NEGATIV	NEGATIV	82		NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV	53		NEGATIV	NEGATIV	83		NEGATIV	NEGATIV
24		NEGATIV	NEGATIV	54		POSITIV	POSITIV	84		NEGATIV	NEGATIV
25		NEGATIV	NEGATIV	55		NEGATIV	NEGATIV	85		NEGATIV	NEGATIV
26		NEGATIV	NEGATIV	56		NEGATIV	NEGATIV	86		NEGATIV	NEGATIV
27		NEGATIV	NEGATIV	57		NEGATIV	NEGATIV	87		NEGATIV	NEGATIV
28		NEGATIV	NEGATIV	58		NEGATIV	NEGATIV	88		NEGATIV	NEGATIV
29		NEGATIV	NEGATIV	59		NEGATIV	NEGATIV	89		NEGATIV	NEGATIV
30		NEGATIV	NEGATIV	60		NEGATIV	NEGATIV	90		NEGATIV	NEGATIV
								91		NEGATIV	NEGATIV

## ERGEBNIS

14 Proben lieferten ein klares positives Signal mit 100% Detektionsrate.

# Der ANALYSEKIT 1

## R-GEN

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

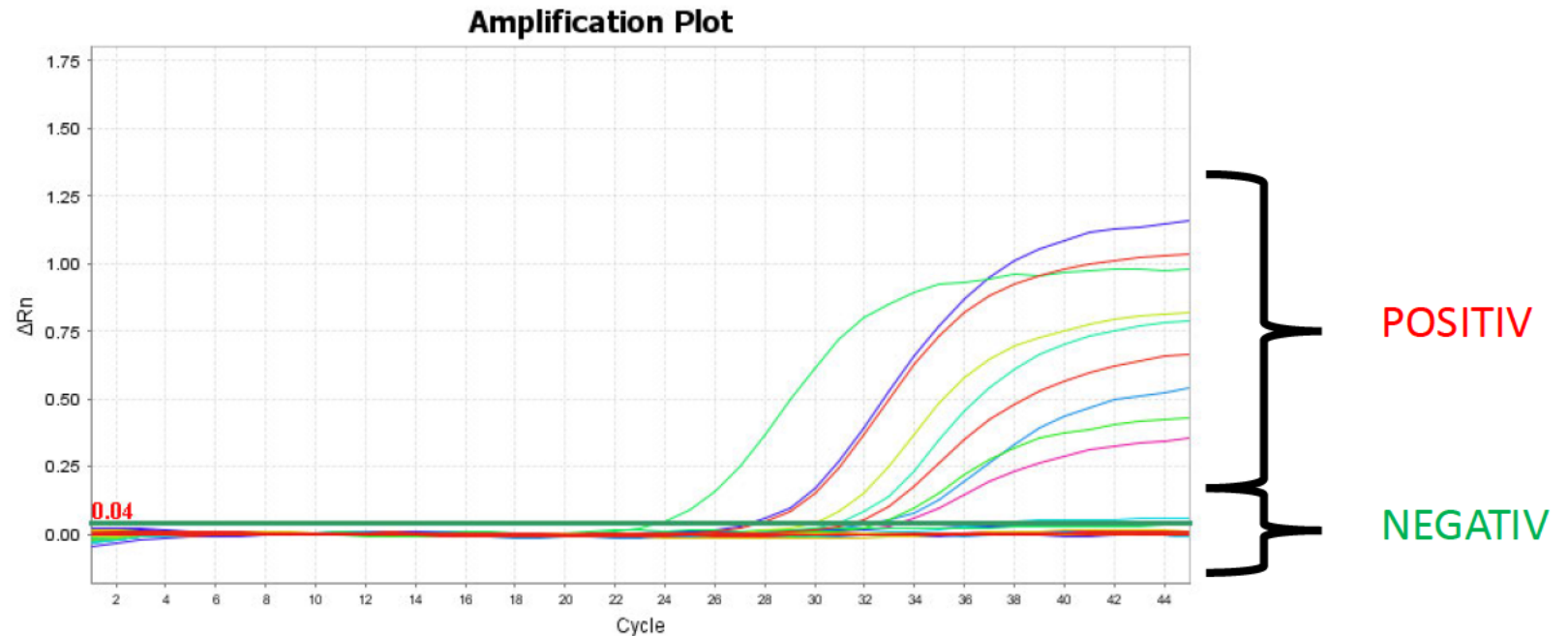
CE-IVD Zertifiziert

## POSITIVES SIGNAL

Das R-Gen lieferte ebenso positive Ergebnisse, allerdings etwas weniger deutliche als das E-Gen.

## VORGENGESWEISE

Grundvoraussetzung ist ein klares Signal der HEK Kontrolle. Sollte das R-Gen ein positives Signal liefern (Exponentieller Anstieg der Amplifikationskurve) und somit einen CT-Wert erzeugen, der kleiner gleich 36 Zyklen ist, wird diese Probe als Positiv ausgegeben. Alle anderen Proben werden als negativ ausgegeben. Ein positives Ergebnis beim R-Gen ist auch bei Ausfall der HEC Kontrolle als positiv auszugeben.



# Die ROHDATAEN

## R-GEN

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

CE-IVD Zertifiziert

PROBE	HERKUNFT	PhoenixDX IVD	
		E-Gen	R-Gen
1		NEGATIV	NEGATIV
2		NEGATIV	NEGATIV
3		NEGATIV	NEGATIV
4		NEGATIV	NEGATIV
5		POSITIV	NEGATIV
6	RINGVERSUCH	NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	NEGATIV
11	RINGVERSUCH	POSITIV	POSITIV
12		NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV
14		NEGATIV	NEGATIV
15		NEGATIV	NEGATIV
16		NEGATIV	NEGATIV
17		NEGATIV	NEGATIV
18		NEGATIV	NEGATIV
19		NEGATIV	NEGATIV
20		NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV
24		NEGATIV	NEGATIV
25		NEGATIV	NEGATIV
26		NEGATIV	NEGATIV
27		NEGATIV	NEGATIV
28		NEGATIV	NEGATIV
29		NEGATIV	NEGATIV
30		NEGATIV	NEGATIV

PROBE	HERKUNFT	PhoenixDX IVD	
		E-Gen	R-Gen
31		NEGATIV	NEGATIV
32	RINGVERSUCH	POSITIV	POSITIV
33	RINGVERSUCH	NEGATIV	NEGATIV
34		NEGATIV	NEGATIV
35		NEGATIV	NEGATIV
36		NEGATIV	NEGATIV
37		NEGATIV	NEGATIV
38	RNA delivered	NEGATIV	NEGATIV
39	RNA delivered	NEGATIV	NEGATIV
40	RNA delivered	POSITIV	NEGATIV
41	RNA delivered	NEGATIV	NEGATIV
42		NEGATIV	NEGATIV
43		NEGATIV	NEGATIV
44		NEGATIV	NEGATIV
45		NEGATIV	NEGATIV
46		NEGATIV	NEGATIV
47		NEGATIV	NEGATIV
48		NEGATIV	NEGATIV
49		POSITIV	NEGATIV
50	RNA delivered	POSITIV	NEGATIV
51	RNA delivered	NEGATIV	NEGATIV
52		NEGATIV	NEGATIV
53		NEGATIV	NEGATIV
54		POSITIV	POSITIV
55		NEGATIV	NEGATIV
56		NEGATIV	NEGATIV
57		NEGATIV	NEGATIV
58		NEGATIV	NEGATIV
59		NEGATIV	NEGATIV
60		NEGATIV	NEGATIV

PROBE	HERKUNFT	PhoenixDX IVD	
		E-Gen	R-Gen
61		NEGATIV	NEGATIV
62		NEGATIV	NEGATIV
63		NEGATIV	NEGATIV
64		NEGATIV	NEGATIV
65		NEGATIV	NEGATIV
66		NEGATIV	NEGATIV
67	RNA delivered	POSITIV	POSITIV
68	RNA delivered	NEGATIV	NEGATIV
69	RNA delivered	POSITIV	POSITIV
70		NEGATIV	NEGATIV
71		NEGATIV	NEGATIV
72		NEGATIV	NEGATIV
73		NEGATIV	NEGATIV
74		NEGATIV	NEGATIV
75		NEGATIV	NEGATIV
76		NEGATIV	NEGATIV
77		NEGATIV	NEGATIV
78	RINGVERSUCH	POSITIV	POSITIV
79	RINGVERSUCH	POSITIV	POSITIV
80	RINGVERSUCH	NEGATIV	NEGATIV
81		NEGATIV	NEGATIV
82		NEGATIV	NEGATIV
83		NEGATIV	NEGATIV
84		NEGATIV	NEGATIV
85		NEGATIV	NEGATIV
86		NEGATIV	NEGATIV
87		NEGATIV	NEGATIV
88		NEGATIV	NEGATIV
89		NEGATIV	NEGATIV
90		NEGATIV	NEGATIV
91		NEGATIV	NEGATIV

## ERGEBNIS

Alle R-Gen positiven Proben haben auch ein E-Gen Signal ausgegeben. Nicht jede positive E-Gen Probe hat jedoch ein R-Gen Signal ausgegeben. Es scheint die zusätzliche Analyse des R-Gens keinen Mehrwert bei der Detektion des Virus zu liefern, da das E-Gen die positive Proben scheinbar verlässlich detektiert.

# Das ERGEBNIS

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

CE-IVD Zertifiziert

## ZUSAMMENFASSUNG

Das Analysesystem von Procomcure lieferte sehr gute und eindeutige Ergebnisse. Die interne Kontrolle gegen humane RNA ist ein definitiver Plus-Punkt dieses Systems, die andere Systeme nicht haben und somit z.B. reine Wasserproben von echten Abstrichen nicht unterscheiden können.

Die positiven Proben zeigten ein klares Signal mit dem E-Gen Assay. 9 von den 14 positive Proben bestätigten sich auch durch ein Signal mit dem R-Gen Assay. Das E-Gen scheint grundsätzlich auch alleine für die Diagnostik von SARS-COV-2 geeignet zu sein. Die zusätzliche Analytik vom R-Gen ist zwar empfehlenswert, scheint aber keinen analytischen Mehrwert bei der Diagnose zu liefern.

	KORREKT NEGATIVE	FALSCH NEGATIVE	KORREKT POSITIVE	FALSCH POSITIVE	SENSITIVITÄT	SPEZIFIZITÄT
PhoenixDX CE-IVD	77	0	14	0	100.0%	100.0%

## PHOENIXDX CE-IVD-Kit

SENSITIVITÄT: 100%

SPEZIFIZITÄT: 100%

# **REALQUALITY RQ-2019-nCoV**

**CE-IVD**

**(AB Analitica)**

<https://www.abanalitica.com/en/catalogo/product/realquality-rq-2019-ncov/>

# Der **ANALYSEKIT 2**

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## **AMPL. KONTROLLE**

REALQUALITY  
RQ-2019-nCoV

AB Analitika

CE-IVD Zertifiziert

## **INTERNE QUALITÄTSKONTROLLE**

Dieser Kit hat keine Qualitätskontrolle der Probe, sondern nur eine interne zugemischte Amplifikationskontrolle.

## **VORGENEHSWEISE**

Die zugemischte Amplifikationskontrolle muss ein exponentielles Signal liefern. Proben, bei denen dies nicht der Fall ist werden wiederholt oder ausgeschlossen.



# Der ANALYSEKIT 2

## R-GEN

REALQUALITY  
RQ-2019-nCoV

AB Analytika

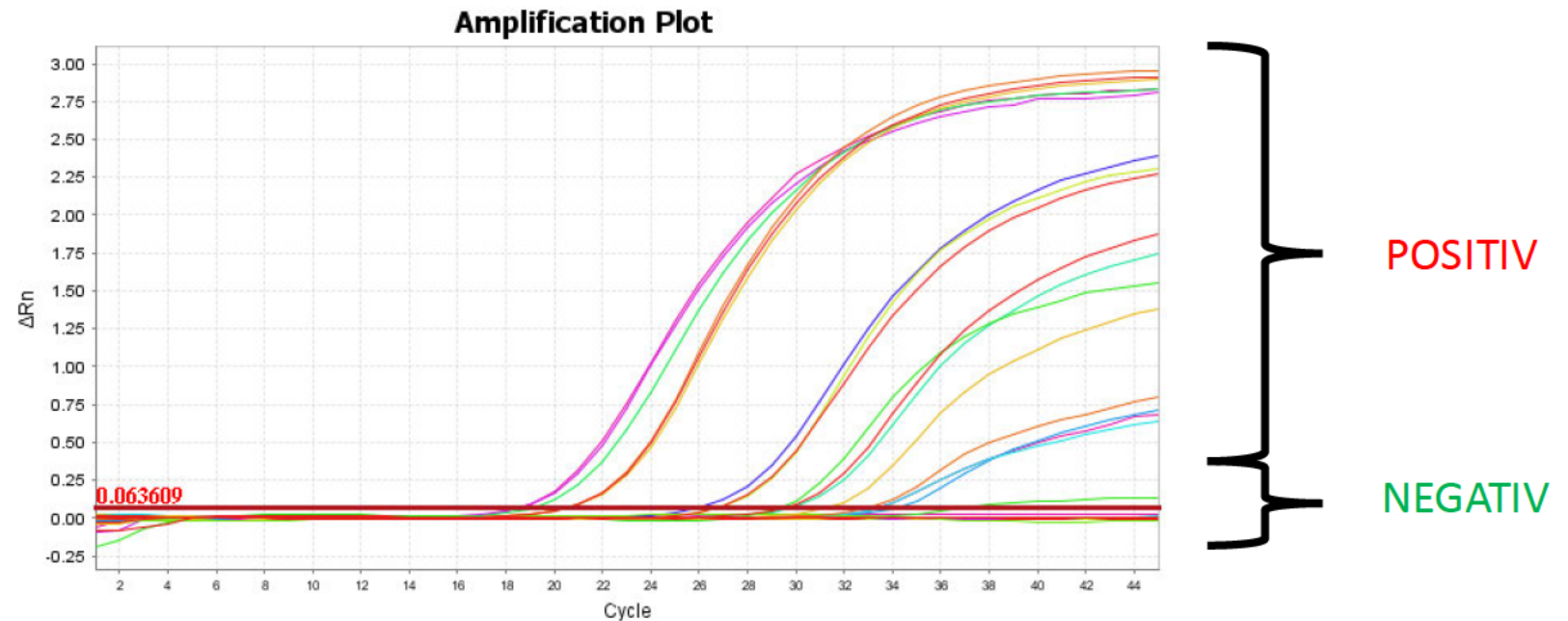
CE-IVD Zertifiziert

## POSITIVES SIGNAL

Der REALQUALITY Kit liefert ein Signal mithilfe des R-Gens. Negative Proben liefern kein Hintergrundsignal und sind deutlich zu unterscheiden.

## VORGEHENSWEISE

Sollte das R-Gen ein positives Signal liefern (Exponentieller Anstieg der Amplifikationskurve) und somit einen CT-Wert erzeugen, der kleiner gleich 36 Zyklen ist, wird diese Probe als Positiv ausgegeben. Alle anderen Proben werden als negativ ausgegeben.





# Die ROHDATAEN

R-GEN

REALQUALITY  
RQ-2019-nCoV

AB Analytika

CE-IVD Zertifiziert

PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD REALQUALITY
1		NEGATIV	NEGATIV
2		NEGATIV	NEGATIV
3		NEGATIV	NEGATIV
4		NEGATIV	NEGATIV
5		POSITIV	POSITIV
6	RINGVERSUCH	NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	NEGATIV
11	RINGVERSUCH	POSITIV	POSITIV
12	RINGVERSUCH	NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV
14		NEGATIV	NEGATIV
15		NEGATIV	NEGATIV
16		NEGATIV	NEGATIV
17		NEGATIV	NEGATIV
18		NEGATIV	NEGATIV
19		NEGATIV	NEGATIV
20		NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV
24		NEGATIV	NEGATIV
25		NEGATIV	NEGATIV
26		NEGATIV	NEGATIV
27		NEGATIV	NEGATIV
28		NEGATIV	NEGATIV
29		NEGATIV	NEGATIV
30		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD REALQUALITY
31		NEGATIV	NEGATIV
32	RINGVERSUCH	POSITIV	POSITIV
33	RINGVERSUCH	NEGATIV	NEGATIV
34		NEGATIV	NEGATIV
35		NEGATIV	NEGATIV
36		NEGATIV	NEGATIV
37		NEGATIV	NEGATIV
38	RNA delivered	NEGATIV	NEGATIV
39	RNA delivered	NEGATIV	NEGATIV
40	RNA delivered	POSITIV	POSITIV
41	RNA delivered	NEGATIV	NEGATIV
42		NEGATIV	NEGATIV
43		NEGATIV	NEGATIV
44		NEGATIV	NEGATIV
45		NEGATIV	NEGATIV
46		NEGATIV	NEGATIV
47		NEGATIV	NEGATIV
48		NEGATIV	NEGATIV
49		POSITIV	POSITIV
50	RNA delivered	POSITIV	POSITIV
51	RNA delivered	NEGATIV	NEGATIV
52		NEGATIV	NEGATIV
53		NEGATIV	NEGATIV
54		POSITIV	POSITIV
55		NEGATIV	NEGATIV
56		NEGATIV	NEGATIV
57		NEGATIV	NEGATIV
58		NEGATIV	NEGATIV
59		NEGATIV	NEGATIV
60		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	CE-IVD REALQUALITY
61		NEGATIV	NEGATIV
62		NEGATIV	NEGATIV
63		NEGATIV	NEGATIV
64		NEGATIV	NEGATIV
65		NEGATIV	NEGATIV
66		NEGATIV	NEGATIV
67	RNA delivered	POSITIV	POSITIV
68	RNA delivered	NEGATIV	NEGATIV
69	RNA delivered	POSITIV	POSITIV
70		NEGATIV	NEGATIV
71		NEGATIV	NEGATIV
72		NEGATIV	NEGATIV
73		NEGATIV	NEGATIV
74		NEGATIV	NEGATIV
75		NEGATIV	NEGATIV
76		NEGATIV	NEGATIV
77		NEGATIV	NEGATIV
78	RINGVERSUCH	POSITIV	POSITIV
79	RINGVERSUCH	POSITIV	POSITIV
80	RINGVERSUCH	NEGATIV	NEGATIV
81		NEGATIV	NEGATIV
82		NEGATIV	NEGATIV
83		NEGATIV	NEGATIV
84		NEGATIV	NEGATIV
85		NEGATIV	NEGATIV
86		NEGATIV	NEGATIV
87		NEGATIV	NEGATIV
88		NEGATIV	NEGATIV
89		NEGATIV	NEGATIV
90		NEGATIV	NEGATIV
91		NEGATIV	NEGATIV

# Das ERGEBNIS

REALQUALITY  
RQ-2019-nCoV

AB Analitika

CE-IVD Zertifiziert

## ZUSAMMENFASSUNG

Das Analysesystem von AB Analitika lieferte gute Ergebnisse.

Die positiven Proben zeigten ein klares Signal mit dem R-Gen Assay. Lediglich eine Probe, die mit den anderen Analysesystemen ein positives Ergebnis geliefert hat und aus einer Zellkultur im Rahmen eines Ringversuches stammt wurde von REALQUALITY nicht erkannt.

	KORREKT NEGATIVE	FALSCH NEGATIVE	KORREKT POSITIVE	FALSCH POSITIVE	SENSITIVITÄT	SPEZIFIZITÄT
REALQUALITY CE-IVD	76	1	13	0	100.0%	98.7%

## REALQUALITY CE-IVD-Kit

SENSITIVITÄT: 100%  
SPEZIFIZITÄT: 98.7%

# **RIDA®GENE SARS-CoV-2 RUO**

**RESEARCH USE**

**(R-Biopharm)**

<https://clinical.r-biopharm.com/products/ridagene-sars-cov-2-ruo/>

# Der **ANALYSEKIT 3**

---

## **AMPL. KONTROLLE**

RIDA® GENE SARS-CoV-2  
RUO

R-Biopharm

RESEARCH USE ONLY

## **INTERNE QUALITÄTSKONTROLLE**

Dieser Kit hat keine Qualitätskontrolle der Probe, sondern nur eine interne zugemischte Amplifikationskontrolle.

## **VORGANGEHWEISE**

Die zugemischte Amplifikationskontrolle muss ein exponentielles Signal liefern. Proben, bei denen dies nicht der Fall ist werden wiederholt oder ausgeschlossen.

# Der ANALYSEKIT 3

## E-GEN

RIDA® GENE SARS-CoV-2  
RUO

R-Biopharm

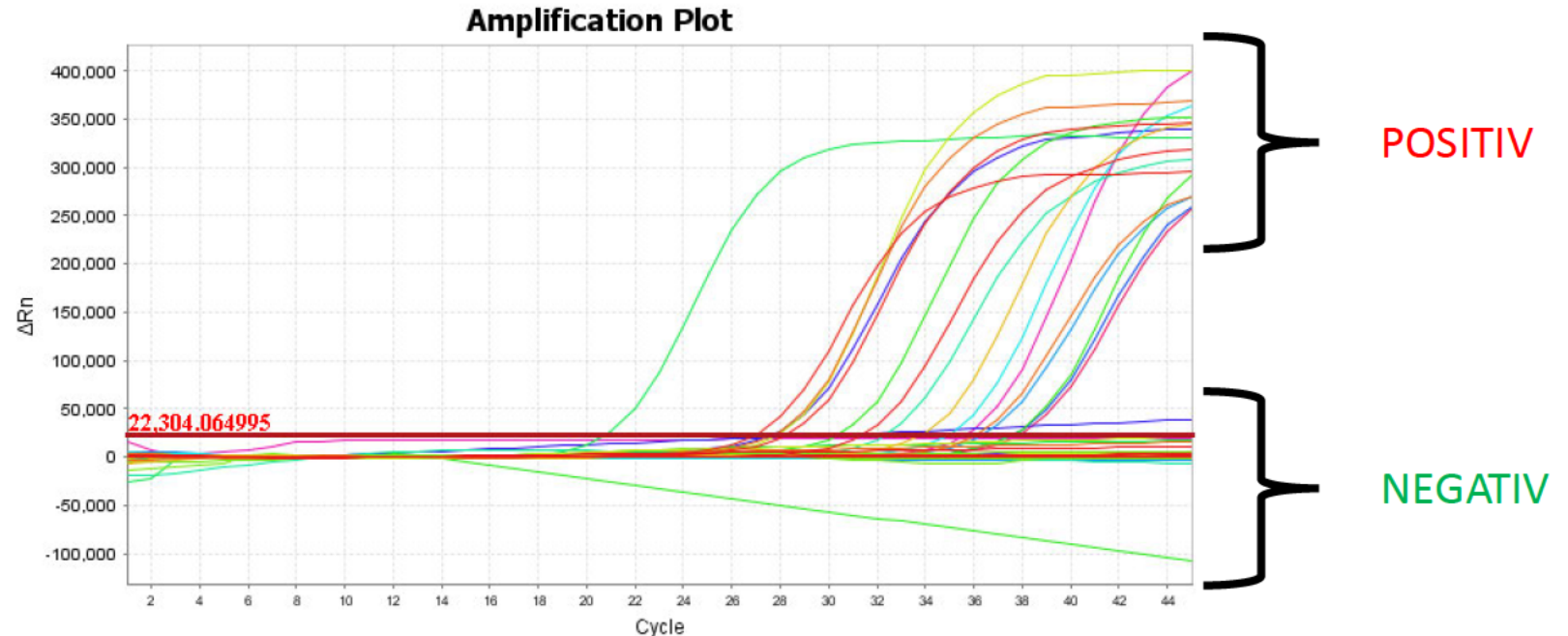
RESEARCH USE ONLY

## POSITIVES SIGNAL

Der RIDA-Kit fokussiert sich bei der Analyse auf das E-Gen. Er erzeugt bei negativen Proben kein Hintergrundsignal und liefert gut sichtbare positive exponentielle Signale bei positiven Proben.

## VORGENGESWEISE

Sollte das E-Gen ein positives Signal liefern (Exponentieller Anstieg der Amplifikationskurve) und somit einen CT-Wert erzeugen, der kleiner gleich 36 Zyklen ist, wird diese Probe als Positiv ausgegeben. Alle anderen Proben werden als negativ ausgegeben.



# Die ROHDATAEN

## R-GEN

RIDA® GENE SARS-CoV-2  
RUO

R-Biopharm

RESEARCH USE ONLY

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH RIDA
1		NEGATIV	NEGATIV
2		NEGATIV	NEGATIV
3		NEGATIV	NEGATIV
4		NEGATIV	NEGATIV
5		POSITIV	POSITIV
6	RINGVERSUCH	NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	POSITIV
11	RINGVERSUCH	POSITIV	POSITIV
12	RINGVERSUCH	NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV
14		NEGATIV	NEGATIV
15		NEGATIV	NEGATIV
16		NEGATIV	NEGATIV
17		NEGATIV	NEGATIV
18		NEGATIV	NEGATIV
19		NEGATIV	NEGATIV
20		NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV
24		NEGATIV	NEGATIV
25		NEGATIV	NEGATIV
26		NEGATIV	NEGATIV
27		NEGATIV	NEGATIV
28		NEGATIV	NEGATIV
29		NEGATIV	NEGATIV
30		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH RIDA
31		NEGATIV	NEGATIV
32	RINGVERSUCH	POSITIV	POSITIV
33	RINGVERSUCH	NEGATIV	NEGATIV
34		NEGATIV	NEGATIV
35		NEGATIV	NEGATIV
36		NEGATIV	NEGATIV
37		NEGATIV	NEGATIV
38	RNA delivered	NEGATIV	NEGATIV
39	RNA delivered	NEGATIV	NEGATIV
40	RNA delivered	POSITIV	POSITIV
41	RNA delivered	NEGATIV	NEGATIV
42		NEGATIV	NEGATIV
43		NEGATIV	NEGATIV
44		NEGATIV	NEGATIV
45		NEGATIV	NEGATIV
46		NEGATIV	NEGATIV
47		NEGATIV	NEGATIV
48		NEGATIV	NEGATIV
49		POSITIV	POSITIV
50	RNA delivered	POSITIV	POSITIV
51	RNA delivered	NEGATIV	NEGATIV
52		NEGATIV	NEGATIV
53		NEGATIV	NEGATIV
54		POSITIV	POSITIV
55		NEGATIV	NEGATIV
56		NEGATIV	NEGATIV
57		NEGATIV	NEGATIV
58		NEGATIV	NEGATIV
59		NEGATIV	NEGATIV
60		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH RIDA
61		NEGATIV	NEGATIV
62		NEGATIV	NEGATIV
63		NEGATIV	NEGATIV
64		NEGATIV	NEGATIV
65		NEGATIV	NEGATIV
66		NEGATIV	NEGATIV
67	RNA delivered	POSITIV	POSITIV
68	RNA delivered	NEGATIV	NEGATIV
69	RNA delivered	POSITIV	POSITIV
70		NEGATIV	NEGATIV
71		NEGATIV	NEGATIV
72		NEGATIV	NEGATIV
73		NEGATIV	NEGATIV
74		NEGATIV	NEGATIV
75		NEGATIV	NEGATIV
76		NEGATIV	NEGATIV
77		NEGATIV	NEGATIV
78	RINGVERSUCH	POSITIV	POSITIV
79	RINGVERSUCH	POSITIV	POSITIV
80	RINGVERSUCH	NEGATIV	NEGATIV
81		NEGATIV	NEGATIV
82		NEGATIV	NEGATIV
83		NEGATIV	NEGATIV
84		NEGATIV	NEGATIV
85		NEGATIV	NEGATIV
86		NEGATIV	NEGATIV
87		NEGATIV	NEGATIV
88		NEGATIV	NEGATIV
89		NEGATIV	NEGATIV
90		NEGATIV	NEGATIV
91		NEGATIV	NEGATIV

## ERGEBNIS

14 Proben lieferten ein klares positives Signal mit 100% Detektionsrate.

# Das ERGEBNIS

RIDA® GENE SARS-CoV-2  
RUO

R-Biopharm

RESEARCH USE ONLY

## ZUSAMMENFASSUNG

Obwohl nur ein "Research use only" Produkt, lieferte RIDA GENE sehr gute und eindeutige Ergebnisse.

Die positiven Proben zeigten ein klares Signal mit dem E-Gen Assay. Das E-Gen scheint grundsätzlich für die Diagnostik von SARS-COV-2 geeignet zu sein.

	KORREKT NEGATIVE	FALSCH NEGATIVE	KORREKT POSITIVE	FALSCH POSITIVE	SENSITIVITÄT	SPEZIFIZITÄT
RIDA Gene <b>RESEARCH</b>	77	0	14	0	100.0%	100.0%

## RIDA GENE RESEARCH USE ONLY KIT

SENSITIVITÄT: 100%

SPEZIFIZITÄT: 100%

# PhoenixDx® 2019-nCoV RNA Detection Kit

**CE-IVD**

**(Procomcure Biotech)**

<https://shop.procomcure.com/produkt/phoenixdx-2019-ncov-rna-detection-kit/>



# Der **ANALYSEKIT 4**

## **HEK KONTROLLE**

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

RESEARCH USE ONLY

## **INTERNE QUALITÄTSKONTROLLE**

Der PhoenixDX RESEARCH USE ONLY Kit von Procomcure ist vom selben Hersteller wie unser präferierter CE-IVD Kit. Genau wie im CE-IVD Kit besitzt er eine interne Qualitätskontrolle, die humane RNA nachweist und somit die Qualität der Probe sicherstellt. Ist keine humane RNA in ausreichender Menge nachweisbar, ist die Probe entweder degradiert oder nicht ordnungsgemäß abgenommen worden.

## **VORGENEHSWEISE**

Sollte die Humane Kontrolle (HEK) keine Amplifikation zeigen, sind die Qualitätskriterien nicht erfüllt und die Probe wird abgelehnt und eine neue Probe angefordert. Da HEC absichtlich sehr empfindlich auf Qualitätsschwankungen ist, ist ein negatives HEC Signal zu ignorieren, wenn ein positives E-Gen Signal geliefert wird. Die Probe ist somit positive.

# Die ROHDATAEN

## E-GEN

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

RESEARCH USE ONLY

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH PHOENIX RESEARCH
1		NEGATIV	NEGATIV
2		NEGATIV	NEGATIV
3		NEGATIV	NEGATIV
4		NEGATIV	NEGATIV
5		POSITIV	NEGATIV
6	RINGVERSUCH	NEGATIV	NEGATIV
7	RINGVERSUCH	POSITIV	POSITIV
8	RINGVERSUCH	NEGATIV	NEGATIV
9	RINGVERSUCH	POSITIV	POSITIV
10	RINGVERSUCH	POSITIV	POSITIV
11	RINGVERSUCH	POSITIV	POSITIV
12	RINGVERSUCH	NEGATIV	NEGATIV
13	RINGVERSUCH	NEGATIV	NEGATIV
14		NEGATIV	NEGATIV
15		NEGATIV	NEGATIV
16		NEGATIV	NEGATIV
17		NEGATIV	NEGATIV
18		NEGATIV	NEGATIV
19		NEGATIV	NEGATIV
20		NEGATIV	NEGATIV
21	RNA delivered	NEGATIV	NEGATIV
22	RNA delivered	NEGATIV	NEGATIV
23	RNA delivered	NEGATIV	NEGATIV
24		NEGATIV	NEGATIV
25		NEGATIV	NEGATIV
26		NEGATIV	NEGATIV
27		NEGATIV	NEGATIV
28		NEGATIV	NEGATIV
29		NEGATIV	NEGATIV
30		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH PHOENIX RESEARCH
31		NEGATIV	NEGATIV
32	RINGVERSUCH	POSITIV	POSITIV
33	RINGVERSUCH	NEGATIV	NEGATIV
34		NEGATIV	NEGATIV
35		NEGATIV	NEGATIV
36		NEGATIV	NEGATIV
37		NEGATIV	NEGATIV
38	RNA delivered	NEGATIV	NEGATIV
39	RNA delivered	NEGATIV	NEGATIV
40	RNA delivered	POSITIV	POSITIV
41	RNA delivered	NEGATIV	NEGATIV
42		NEGATIV	NEGATIV
43		NEGATIV	NEGATIV
44		NEGATIV	NEGATIV
45		NEGATIV	NEGATIV
46		NEGATIV	NEGATIV
47		NEGATIV	NEGATIV
48		NEGATIV	NEGATIV
49		POSITIV	POSITIV
50	RNA delivered	POSITIV	POSITIV
51	RNA delivered	NEGATIV	NEGATIV
52		NEGATIV	NEGATIV
53		NEGATIV	NEGATIV
54		POSITIV	POSITIV
55		NEGATIV	NEGATIV
56		NEGATIV	NEGATIV
57		NEGATIV	NEGATIV
58		NEGATIV	NEGATIV
59		NEGATIV	NEGATIV
60		NEGATIV	NEGATIV

PROBE	HERKUNFT	KORREKTES ERGEBNIS	RESEARCH PHOENIX RESEARCH
61		NEGATIV	NEGATIV
62		NEGATIV	NEGATIV
63		NEGATIV	NEGATIV
64		NEGATIV	NEGATIV
65		NEGATIV	NEGATIV
66		NEGATIV	NEGATIV
67	RNA delivered	POSITIV	POSITIV
68	RNA delivered	NEGATIV	NEGATIV
69	RNA delivered	POSITIV	POSITIV
70		NEGATIV	NEGATIV
71		NEGATIV	NEGATIV
72		NEGATIV	NEGATIV
73		NEGATIV	NEGATIV
74		NEGATIV	NEGATIV
75		NEGATIV	NEGATIV
76		NEGATIV	NEGATIV
77		NEGATIV	NEGATIV
78	RINGVERSUCH	POSITIV	POSITIV
79	RINGVERSUCH	POSITIV	POSITIV
80	RINGVERSUCH	NEGATIV	NEGATIV
81		NEGATIV	NEGATIV
82		NEGATIV	NEGATIV
83		NEGATIV	NEGATIV
84		NEGATIV	NEGATIV
85		NEGATIV	NEGATIV
86		NEGATIV	NEGATIV
87		NEGATIV	NEGATIV
88		NEGATIV	NEGATIV
89		NEGATIV	NEGATIV
90		NEGATIV	NEGATIV
91		NEGATIV	NEGATIV

## ERGEBNIS

13 Proben lieferten ein klares positives Signal.

Eine Probe (Quelle: 14 Tage Lagerung bei Raumtemperatur) wurde nicht richtig detektiert.

# Das ERGEBNIS

PhoenixDx® 2019-nCoV  
RNA Detection Kit

Procomcure GmbH

RESEARCH USE ONLY

## ZUSAMMENFASSUNG

Das RESEARCH USE ONLY Analysesystem von Procomcure lieferte gute, jedoch nicht perfekte Ergebnisse, da eine Probe mit niedriger Virenlast und 14 Tage Lagerung bei Raum Temperatur nicht detektiert wurde.

	KORREKT NEGATIVE	FALSCH NEGATIVE	KORREKT POSITIVE	FALSCH POSITIVE	SENSITIVITÄT	SPEZIFIZITÄT
PhoenixDX RESEARCH	76	1	13	0	100.0%	98.7%

## PHOENIXDX RESEARCH USE ONLY -KIT

SENSITIVITÄT: 100%  
SPEZIFIZITÄT: 98.7%



THE  
**END**

5.1.2.e

[Novogenia.com](http://Novogenia.com)

5.1.2.e

## In-house validation and performance characteristics of a high throughput COVID-19 qRT-PCR detection assay using 384-well format and 10µl reaction volume

### 5.1.2.e

Laboratory of the Novogenia GmbH  
Strass 19, 5301 Eugendorf, AUSTRIA

20.12.2020

#### Abstract

The laboratory diagnostic gold standard for the diagnosis of infections with coronavirus SARS-CoV-2 is the direct virus detection from respiratory secretions using a real-time reverse transcriptase (RT) polymerase chain reaction (PCR) test for the detection of SARS-CoV-2. We developed an automated high throughput SARS-CoV-2 detection workflow using samples collected in transport media, a magnetic bead RNA isolation, and a 384-well format RT-qPCR using the FTD SARS-CoV-2 Assay from Fast Track Diagnostics. Performance characteristics were measured using 4 different panels showing the analytical and clinical performance of the workflow. The following data was collected: Analytical sensitivity, analytical specificity, cross-reactivity, and clinical performance.

#### Methods

##### Sample collection

Sensitivity panel: SARS-CoV-2 sample from a 1:100 dilution derived from stock (hCoV-19/Netherlands/NoordBrabant\_10003/2020) in MEM with Hanks' salts; heat-inactivated at 60°C for 2 hours. The sample contains SARS-CoV-2 with a  $5.62 \times 10^5$  TCID<sub>50</sub>/ml and up to  $4.56 \times 10^7$  digital copies of SARS-CoV-2 positive-strand RNA/ml. For the validation experiment, we used a 10-fold dilution series ranging from  $4.56 \times 10^7$  viral copies per millilitre (cp/ml) to 4.56 cp/ml.

Specificity panel: The panel consists of 298 negative samples (111 non-template controls (NTC) controls, 187 extracted confirmed negative clinical samples).

Cross-reactivity panel: 10 simulated clinical samples (1ml) containing either human respiratory seasonal viruses, heat-inactivated SARS-CoV-2 virus, or no virus (a negative control) in MEM with Hanks' salts and Hep2 cells (10.000 cells/ml).

Clinical performance panel: 91 confirmed positive (19) and negative (72) clinical samples collected with nasopharyngeal swabs, oropharyngeal swabs, or a gargling kit. The results have been confirmed by two other CE IVD labelled RT-qPCR assays.

##### RNA extraction

RNA was extracted using the SphaeraMag DNA/RNA Isolation Kit 96-Universal (Procomcure Biotech) on Allsheng Auto-Pure96 automated systems according to the manufacturer protocol with the exceptions of using 300 µL of starting input and eluting in 60 µL elution buffer.

##### RT-qPCR

RT-qPCR was performed using the FTD SARS-CoV-2 Assay (Fast Track Diagnostics) which targets the highly conserved regions within the ORF1ab and N gene. All reactions were performed on a Quantstudio 5 (Thermo Fisher Scientific, Applied Biosystems) according to the manufacturers'

instructions in 10µl reaction volumes on 384-well PCR plates. Clinical samples were confirmed using the SARS-CoV-2 RealFast Assay (Vienna lab) and the PhoenixDX SARS-CoV-2 assay (Procomcure).

## Results

### Analytical sensitivity

The experiment aimed to prove acceptable sensitivity, reproducibility, and limit of detection of the highly automated SARS-CoV-2 workflow using the FTD SARS-CoV-2 Assay. The analytical sensitivity is the ability of the assay to consistently detect a given target sequence in the tested biological specimens. The lowest concentration detectable in greater than or equal to 95% of tested specimens is then defined as the “Limit of Detection” (LoD). We created a serial dilution of the SARS-CoV-2 stock sample achieving final viral copies of 9120000 down to 0 digital copies per reaction. All PCR reactions were performed in quadruplicates and the results including mean Ct values were summarized in table 1.

Table 1:

Dilution	digital copies / ml sample	digital copies per reaction (4µl)			
	$4.56 \times 10^9$	91200000			
10-1	$4.56 \times 10^8$	9120000	Result	Mean Ct	Positive(s)
10-2	$4.56 \times 10^7$	912000	Pos	21.44	(4/4)
10-3	$4.56 \times 10^6$	91200	Pos	23.31	(4/4)
10-4	$4.56 \times 10^5$	9120	Pos	26.72	(4/4)
10-5	$4.56 \times 10^4$	912	Pos	30.26	(4/4)
10-6	$4.56 \times 10^3$	91	Pos	33.24	(4/4)
10-7	$4.56 \times 10^2$	9	Pos	37.48	(4/4)
10-8	$4.56 \times 10^1$	1	Pos	38.87	(1/4)
10-9	4.56	0	Neg	Undeterm.	(0/4)

The data demonstrate robust performance and acceptable sensitivity of the laboratory workflow. Mean Ct values ranging from 21.44 for the highest ( $4.56 \times 10^7$  copies/ml transport medium or  $9.12 \times 10^5$  copies/reaction) to 38.87 for the lowest (45.6 copies/ml transport medium or 1 copy per reaction) concentration of SARS-CoV-2 virus. The method shows a reproducible low limit of detection (LOD) with  $4.56 \times 10^2$  copies per ml transport media or 9 copies per reaction.

### Analytical specificity

Analytical specificity measures the proportion of samples without SARS-CoV-2 that are correctly classified as negative. Therefore, 111 non-template controls (NTC) controls and 187 confirmed negative clinical samples have been tested to evaluate the occurrence of potential non-specific amplification when using the FTD SARS-CoV-2 kit. Analytical specificity is displayed in Table 2.

Table 2:

	Total reactions	Positive results	Analytical sensitivity %	Confidence interval %
Negative clinical samples	187	0	100	98.05 to 100
Non-template control	111	0	100	96.73 to 100
Total	298	0	100	98.77 to 100

Overall, an analytical specificity of 100% was reached.

### Cross-reactivity

The analysis was tested for potential cross-reactions with common human seasonal viruses causing respiratory infections. The panel contained either human respiratory seasonal viruses, heat-

inactivated SARS-CoV-2 virus or no virus. The qPCRs were performed in quadruplicates. Results including mean Ct values are shown in table 3.

Table 3:

Definition	Virus	Concentration	Result	Mean Ct
EQA6_CoV20_01	CoV-NL63		Neg	Undetermined
EQA6_CoV20_02	CoV-229E		Neg	Undetermined
EQA6_CoV20_03	SARS-CoV-2	$4.56 * 10^1$	Neg	Undetermined
EQA6_CoV20_04	SARS-CoV-2	$4.56 * 10^2$	Pos	37.86
EQA6_CoV20_05	CoV-OC43		Neg	Undetermined
EQA6_CoV20_06	SARS-CoV-2	$4.56 * 10^2$	Pos	37.07
EQA6_CoV20_07	Influenza virus A(H3N2)		Neg	Undetermined
EQA6_CoV20_08	No virus		Neg	Undetermined
EQA6_CoV20_09	SARS-CoV-1		Neg	Undetermined
EQA6_CoV20_10	SARS-CoV-2 (d1)	$4.56 * 10^4$	Pos	31.16

No unspecific signal could be detected indicating high specificity and no cross-reactivity of the assay. Sample EQA6\_CoV20\_03 was not detected confirming the limit of detection shown in table 1.

#### Clinical performance

As analytical sensitivity and specificity needs to be differentiated from diagnostic sensitivity and specificity, clinical performance was evaluated by analysing 91 confirmed positive (19) or negative (72) samples. The results are shown in table 4.

Table 4:

	Total number	Percentage	Confidence interval %
<b>Sensitivity</b>	19/19	100	82.35 to 100
<b>Specificity</b>	72/72	100	95.01 to 100

The results showed an overall diagnostic sensitivity of 100 % and an overall diagnostic specificity of 100 % for the detection of SARS-CoV-2.


#### **Conclusion**

We established and validated a high throughput SARS-CoV-2 qRT-PCR detection workflow using samples collected in transport media, a magnetic bead RNA isolation, and a 384-well format RT-qPCR assay. Our data demonstrates a highly specific and sensitive workflow ensuring a robust analytical and clinical performance.

Internal Audit Planning PGL 2021-2022																
Norm	ISO	Section	Auditor		may-21	jun-21	jul-21	aug-21	sep-21	oct-21	nov-21	dec-21	jan-22	feb-22	mar-22	apr-22
Management	4.1	5.1.2.e	5.1.2.e													
Quality management, document management and control of records	4.2, 4.3, 4.13	5.1.2.e	5.1.2.e	System audit												
				System audit												
Service agreements / referral laboratory	4.4, 4.5, 4.6, 4.7	5.1.2.e	5.1.2.e	System audit												
				System audit												
Complaints, evaluations and audits	4.8, 4.14	5.1.2.e	5.1.2.e	System audit												
				System audit												
Non-conformities, corrective and preventive measures and continous improvement	4.9, 4.10, 4.11, 4.12	5.1.2.e	5.1.2.e	System audit												
				System audit												
Management review	4.15	5.1.2.e	5.1.2.e													
Personnel, accommodation and enviromental requirements	5.1, 5.2	5.1.2.e	5.1.2.e	System audit												
				System audit												
Laboratory equipment, reagents and consumables	5.3	Office / storage	Interne auditor	System audit												
				System audit												
Pre-analysis	5.4	Sample preparation	Interne Auditor	System audit												
				System audit												
Examination processes, quality examination results, post-examination processes	5.5, 5.6, 5.7	Molecular diagnostics	Interne auditor	System audit												
				System audit												
Reporting results and release of results	5.8, 5.9	Back office	5.1.2.e	System audit												
				System audit												
Laboratory information management	5.10	5.1.2.e	5.1.2.e	System audit												
				System audit												

planning
audit done
audit report



	<b>Internal Audit Procedure</b>	Page 1 of 3
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## PURPOSE

Assessing whether the regulations/procedures of the various sections within the laboratory meet the requirements of ISO 15189 and whether the agreements are known and effective in practice. This way continuous improvement will be established.

## DEFINITIONS AND ABBREVIATIONS

- Audit: a systematic and independent investigation to determine whether the quality activities and results thereof correspond to established regulations and whether the latter have been effectively implemented, as well as be suitable for achieving the targets.
- Auditor: a trained employee who carries out the audit
- Auditee: person to whom the audit is performed

## RESPONSIBILITY

Management:

- determining the planning of the audits
- ultimately responsible for follow-up of actions in response to the audit results

Quality officer:

- drawing up an annual audit plan
- assign audits to auditors
- control of audits in accordance with planning
- monitor progress improvement process
- archiving audit plan, reporting and action plan
- education and training internal auditors

Auditee:


- undergoes the audit

Auditor:

- conducting audit in an objective manner
- timely planning, execution and reporting of an audit
- review the required documents and method descriptions

Supervisor:

- create preconditions for conducting audits
- drawing up an action plan to resolve the findings from the report
- discussing the findings and actions with employees
- take corrective and preventive measures within the stipulated time

	<b>Internal Audit Procedure</b>	Page 2 of 3
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## PROCEDURE

1. The quality officer makes an annual audit plan with a scope of 1 year. In this plan, one or two auditors are linked to each process or department to be tested, who are sufficiently independent with regard to the processes that are audited.

The frequency of an audit depends on the nature of the process/department and the results of previous audits (1-3 years). In principle, the cycle of an internal audit must be completed within one year. Each individual element of ISO 15189 is tested annually. Every year, each individually accredited activity of ISO 15189 must be screened. A lower audit frequency is only allowed if there were no significant deviations during 2 consecutive audit periods.

2. The audit planning is submitted to the management for authorization. The auditors receive an invitation from the quality officer stating the procedure/department to which the audit relates and the period in which the audit must be performed. The supervisor must be available for questions during the audit.

3. The auditors contact the supervisor at least two weeks in advance to make agreements about the date and time for the audit. Prior to the audit, the designated auditors collect and study the necessary information such as quality manual, procedures, protocols, work instructions, and possibly. prior audit reports of the relevant project/procedure. The auditors can request this information from the quality officer. After this preparation, a checklist with points for attention is drawn up for the audit.

The auditors conduct the audit through interviews and work floor observations.

At the start of a visit, the auditors indicate the purpose, method and estimated duration of the audit. During the audit, identified shortcomings and opportunities for improvement are discussed with the auditees and summarized as much as possible.


4. During the audit, notes are made to reconstruct the information obtained afterwards. The notes will be kept until the audit report has been finalized. The auditors complete the checklist in full.

5. The auditors draw up a written report within two weeks of the audit. A template is available for this. The report contains the following parts:

- Standard form with general data such as the audited section, audit date, report date, auditors, relevant procedure and auditees.
- Short report of the conversations with general findings and (non-)conformities

The auditors send the completed checklist and the audit report to the quality officer.

6. The quality officer sends a copy of the audit report to the concerned manager. The manager checks the audit report for factual inaccuracies and reports these to the auditors within two weeks so that the report can be adjusted if necessary. The modified report is resubmitted via the quality officer.

	<b>Internal Audit Procedure</b>	Page 3 of 3
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7. If after 2 weeks the auditee does not contact the auditors, the report is considered final. The report is signed for approval by the manager.

8. The original report is archived by the quality officer. A copy of the final report goes to the supervisor and the head of the department. The supervisor determines whether and how the audit report is handled in the department.

9. The quality officer supplies the action plan by the audit findings. The supervisor determines which actions must be taken in response to the reported findings. The supervisor fills in the actions to be taken in the action plan, supplied by the quality officer, as added to the audit report. Responsible persons and deadlines are determined.

10. The action plan must be drawn up within two weeks of the final report. The management must agree to this and determine this by means of the date and initials. The manager sends a copy of the adopted plan of action to the quality officer and keeps the original.

11. The quality officer is responsible for discussing the audit report and the actions with the employees, and the supervisor is responsible for carrying out the actions in the plan of action within the specified period. The progress of the actions from the action plan are discussed in the weekly staff meeting.

12. When the actions have been carried out, they are signed off with date and initials on the action plan by the manager(s). When all actions have been initialed, the action plan is archived with the relevant audit report by the quality officer.

13. A follow-up audit can be planned and performed by the quality officer in a relatively short period of time. Depends on the goal and the activities to be tested.

#### 14. Taking Corrective Actions

Measures are taken to relieve the irregular and/or incorrect activities. The 4 O's system " Cause, Size, Solution and Operationality" is used, to provide insight into the corrected measures taken.

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Inspectiebezoek Pure Medical onze referentie: 5.1.2.e  
**Datum:** donderdag 21 oktober 2021 21:57:00

---

Dag 5.1.2.e,

Zeer bedankt voor je uitgebreide en heldere verslag! En alle begrip dat het wat langer duurde. Het is bij ons ook erg druk. Daarom ook van mij nu een verlate reactie.

Ik heb nog een vraag over het zuurkastgebruik en over de lysisbuffer. Ik probeer je daar volgende week even telefonisch over te contacteren.

Met groet,  
5.1.2.e

---

**Van:** 5.1.2.e @igj.nl>  
**Verzonden:** donderdag 7 oktober 2021 13:16  
**Aan:** 5.1.2.e @InspectieSZW.nl>  
**Onderwerp:** Inspectiebezoek Pure Medical onze referentie: 5.1.2.e

Dag 5.1.2.e,

Zoals eerder (in de zomer) besproken heeft de Inspectie Gezondheidszorg en Jeugd 5.1.2.i bezocht. Hierbij hebben wij ook een aantal vragen van het ISZW meegenomen. Hierover zouden wij onze bevindingen aan jullie terugkoppelen. Mijn excuses voor de opgelopen vertraging voor deze terugkoppeling. Het is erg druk bij ons.

Mijn collega 5.1.2.e 5.1.2.e en ikzelf hebben woensdagmiddag 14-7-2021 de locatie aan de Olivier van Noortlaan 120, in Vlaardingen bezocht. Wij behandelen deze casus/dit inspectiebezoek intern onder 5.1.2.e .

**Aanleiding**  
 5.1.2.i

- 5.1.2.i

5.1.2.i

- 5.1.2.i

## Casus;

### 5.1.2.i

## Bevindingen

Tijdens ons bezoek hebben we gesproken met de heer 5.1.2.e (5.1.2.e) en de heer 5.1.2.e (5.1.2.e). Hierbij kwam naar voren dat:

### Algemeen:

- Activiteiten bij Pure Medical sinds 2-1-2021 in Vlaardingen plaatsvinden
- Pure Medical doet allen swab afnames afkomstig/in opdracht van de GGD.
- Extractie en PCR gebeuren bij Novogenia in Oostenrijk en de monstervoorbereiding, in Nederland in een laboratorium aan de Olivier van Noortlaan 120 te Vlaardingen. NL; Monstervoorbereiding = uitvullen van buizen met lysisbuffer voor GGD's. Ontvangen buizen van GGD's en overpipetteren van sample in een 96 wells systeem/rack.
- Capaciteit: 20.000 per dag is mogelijk. Op dit moment 7000 /dag monster, komen vanaf 3 uur binnen. Samples komen van meerdere GGD's, worden in Vlaardingen omverpakt en gaan per vliegtuig naar Oostenrijk.
- Naast PCR staat een POCT test ook op de website <https://www.puremedical.world/pcr-laboratory-Analysis>, "pending for validation". Staat er dus wel op wordt niet aangeboden. PCR wordt wel aangeboden
- 15 mensen op dit moment, Pure Medical wordt 2 weken van te voren geïnformeerd door GGD. Maakt opschaling mogelijk.
- Alle medewerkers hebben volgens PM een labachtergrond, eigen werving, geen uitzendbureau. PM zegt eigen medewerkers ook intern te scholen.

### Kwaliteit

- 5.1.2.e geeft aan dat i.s.m. een extern bureau (Cartese) het ISO 15189 accreditatie proces is ingezet. Aanvraag is ingediend bij RvA.
- Micronic buizensysteem (barcode gecodeerd) voor digitale identificatie samplebuis wordt gekoppeld aan de GGD barcode/informatie.
- Iedere 20ste positieve sample wordt 4 dagen bewaard gaat naar het RIVM. Voor specifiek patiënten wordt RNA vanuit Oostenrijk verzonden. Pure Medical bewaard zelf geen samples.
- Al het afval gaat in WIVA vaten, geen onderscheid tussen potentieel besmettelijk en schoon afval.
- Geen zichtbare kalibratie datum op pipetten in het lab. Opmerking; het totaal volume is ook niet cruciaal voor kwaliteit van de test (geen absolute aantallen, output is CT /ml sample). Acceptabel.

### Veiligheid

- Uitvullen transportmedium en overpipetteren van sample wordt gedaan in een zuurkast, geen veiligheidskabinet klasse II. Laborant draagt labjas en handschoenen.
- Laborant droeg geen bril bij handelingen in zuurkast, veiligheidsglas stond niet naar beneden.
- Lab was schoon, wel notitiepapier op tafel bij uitpakken samples.
- Er werd aangegeven dat schoonmaken met 70% alcohol gebeurd. Een opmerking over gemaakt.
- Oogdouche was niet aanwezig. Een opmerking over gemaakt.
- Guanidine thiocynaat lysis buffer stond in plofkast met afzuiging en was correct/volledig gelabeld. Ook 70% alcohol stond in de plofkast.
- Teruggekomen lekkende buizen werden ook bewaard in een zak in de plofkast voor hergebruik, niet wenselijk i.v.m. contaminatie risico. Een opmerking over gemaakt.

### Aanpassingen gedaan door Pure Medical n.a.v. het inspectiebezoek

- Veiligheidsbril. De veiligheidsbrillen zijn besteld en worden gedragen.
- Oogdouches zijn besteld en zijn geïnstalleerd op het laboratorium.
- Het hergebruik van lekke buizen. Dit wordt niet meer uitgevoerd.
- Novogenia. Zoals gezegd wij maken gebruik van het referentie lab Novogenia. Een gerenommeerd lab. Dat ISO 15189 geaccrediteerd is. ( Zie bijlage ).
- Als transport materiaal gebruiken van het transportmateriaal van Bio-echo. Dit transport materiaal inactieveert het virus ( Zie bijlage ).  
Opmerking; een gevalideerd protocol hebben ze niet bijgevoegd, alleen een artikel dat aantoont dat het sample niet potentieel besmettelijk meer is, vraag: is dit acceptabel?
- Het protocol voor schoonmaken van de werkbladen is aangepast. (Zie bijlage ). PM geeft aan dat de analisten hun eigen werkbladen moeten schoonhouden.
- RIE: PM geeft aan in het kader van onze eigen ISO 15189 accreditatie gaan we een eigen RIE houden. Zie planning audits ( meegestuurd in bijlagen).
- Meldingsplicht in het kader van de wet infectie preventie. PM geeft aan; De aanvragen worden uitgevoerd in opdracht van de GGD. Alle uitslagen komen bij de GGD terecht zodat wij niet nog apart hoeven te melden. (Zie hiervoor bijlage.)

### Algemeen

- Algemene indruk is goed, PM weet waar ze mee bezig zijn.
- Gezien de handelingen die hier plaatsvinden zijn wij van mening dat een BSL-II kabinet niet noodzakelijk is. De enige echte lab handeling is het pipetteren van sample in een buis en het over pipetteren van een niet exact volume in een andere buis. Gezien het aannemelijk is dat er geen sprake is van potentieel besmettelijk materiaal, zijn de zuurkasten die hiervoor gebruik worden voldoende. Het lab maakt ook een schone opgeruimde indruk.
- De indruk op het lab is dat het enkele simpele handelingen zijn die schoon en goed worden uitgevoerd.
- 5.1.2.i

### 5.2

Wel mis ik nog documentatie over opleiding/scholing personeel en in house training. En verder documentatie over kwaliteitsborging van de samples tijdens het (lucht) transport. Wel om gevraagd, niet aanwezig. Wederom een uitvraag gedaan. Als de gevraagde documentatie volledig is hebben we geen opmerkingen meer.

### 5.1.2.d

Tenzij jullie op basis van deze informatie nog vragen zorgen hebben.

Graag horen wij van jullie.

Met vriendelijke groet

### 5.1.2.e

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**Van:** 5.1.2.e ) <5.1.2.e@InspectieSZW.nl>

**Verzonden:** dinsdag 13 juli 2021 09:43

**Aan:** 5.1.2.e @igi.nl>

**CC:** 5.1.2.e @igi.nl>

**Onderwerp:** RE: Pure Medical Vlaardingen

Goedemorgen.

Hierbij de vragen vanuit Inspectie SZW. Fijn dat jullie ze mee willen nemen bij jullie bezoek morgen.

Voor ons is gaat het erom zicht te krijgen op de (aard van de) werkzaamheden en de evt. risico's die daarbij kunnen optreden voor de gezondheid/veiligheid van de werker. En of de werkgever die risico's goed in beeld heeft en de benodigde maatregelen toepast om ze te beheersen (risico-inventarisatie incl plan van aanpak tbv de maatregelen). Dat moet enerzijds preventief gebeuren en anderzijds moeten er "vangnetmaatregelen" beschikbaar zijn die,



wanneer er toch iets mis gaat, de gevolgen daarvan zo beperkt mogelijk houden. Het nemen van maatregelen behoort te gebeuren via de zgn. arbeidshygiënische strategie. Dit betekent dat de werkgever - achtereenvolgens - kijkt of hij minder risicovolle stoffen kan gebruiken, technische beheersmaatregelen kan nemen, organisatorische maatregelen kan nemen, persoonlijke beschermingsmiddelen inzet. Verder moeten werknemers zijn geïnformeerd over de risico's en de maatregelen die zij moeten nemen zodat zij daarmee ook meewerken aan hun eigen veiligheid.

Zoals ik het begrepen heb bestaan de werkzaamheden bij Pure Medical uit het vullen van buisjes met een lysis buffer (de VTM vloeistof):

- Wat is de samenstelling van deze vloeistof?
- Geeft die reden om het vullen van de buisjes onder specifieke condities uit te voeren tbv de veiligheid/gezondheid van de werker? Bijv. in een zuurkast of veiligheidskabinet (welk type?)
- En/of reden voor het nemen van vangnetmaatregelen zoals het beschikbaar hebben van een oogspoelvoorziening?
- Worden er nog ander type werkzaamheden uitgevoerd?
- Zijn daar risico's aan verbonden voor de werker?
- Welke beheersmaatregelen zijn daar in dat geval bij getroffen en is dit gebeurd volgens de arbeidshygiënische strategie?
- (eigenlijk de 1<sup>e</sup> te stellen vraag) heeft de werkgever een risico-inventarisatie en -evaluatie gemaakt van de werkzaamheden?

Hoop dat jullie hiermee uit de voeten kunnen? Ik ben desgewenst te contacten voor nadere toelichting.

Buiten reikwijdte van het verzoek

Groet,

5.1.2.e

5.1.2.e

[5.1.2.e@inspectieszw.nl](mailto:5.1.2.e@inspectieszw.nl)

06-5.1.2.e

---

**Van:** 5.1.2.e

**Verzonden:** vrijdag 9 juli 2021 10:55

**Aan:** 5.1.2.e [@igj.nl](mailto:5.1.2.e@igj.nl)>

**CC:** 5.1.2.e [@igj.nl](mailto:5.1.2.e@igj.nl)>

**Onderwerp:** RE: Pure Medical Vlaardingen

Dag 5.1.2.e ,

Goed om te horen dat jullie volgende week een bezoek gaan brengen.  
Ik zorg dat de ISZW vragen uiterlijk dinsdag 12 uur in de mailbox liggen.

Fijn weekend alvast.

Groet,

5.1.2.e

5.1.2.e

5.1.2.e

Ministerie van Sociale Zaken en Werkgelegenheid

5.1.2.e

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Croeselaan 15, 3521 BJ Utrecht | Postbus 90801, 2509 LV Den Haag

M 06 5.1.2.e [@inspectieszw.nl](mailto:5.1.2.e@inspectieszw.nl)

---

**Van:** 5.1.2.e @igj.nl>

**Verzonden:** donderdag 8 juli 2021 15:48

**Aan:** 5.1.2.e @InspectieSZW.nl>

**cc:** 5.1.2.e @igj.nl>

**Onderwerp:** RE: Pure Medical Vlaardingen

Dag 5.1.2.e,

Ik heb de casus met 5.1.2.e besproken,  
We gaan aanstaande woensdag op bezoek bij Pure Medical in Vlaardingen  
Is het mogelijk dat we voor woensdag een lijst met vragen over deze casus vanuit ISZW kunnen krijgen? Dan kunne we die meenemen.

Alvast bedankt

Met vriendelijke groeten,

5.1.2.e

5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518 | 6401DA | Heerlen | Nederland

.....  
T +31 (0)88 1205000  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....

-----Oorspronkelijke afspraak-----

**Van:** 5.1.2.e @InspectieSZW.nl>

**Verzonden:** maandag 5 juli 2021 14:53

**Aan:** 5.1.2.e )

**Onderwerp:** Geaccepteerd: Pure Medical Vlaardingen

**Tijd:** dinsdag 6 juli 2021 15:30-16:30 (UTC+01:00) Amsterdam, Berlijn, Bern, Rome, Stockholm, Wenen.

**Locatie:** Webex



# Buiten reikwijdte verzoek

**Van:** 5.1.2.e @puregeneticlifestyle.com>

**Verzonden:** woensdag 3 november 2021 16:53

**Aan:** 5.1.2.e @igj.nl>

**CC:** Directie <directie@5.1.2.e.nl>; 5.1.2.e <5.1.2.e@puregeneticlifestyle.com>; 5.1.2.e@gmail.com>

**Onderwerp:** Re: 5.1.2.e Aankondiging inspectiebezoek Pure Medical (PGL Finance B.V.)

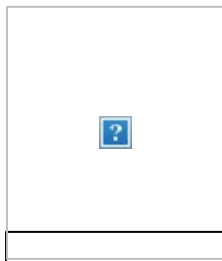
Beste 5.1.2.e

Graag bevestigen wij deze afspraak. 5.1.2.e, 5.1.2.e en 5.1.2.e, 5.1.2.e zullen aanwezig zijn om de inspectie te woord te staan.

Met vriendelijke groet,

5.1.2.e

5.1.2.e



Pure Medical

+31 (0)6 5.1.2.e

<https://www.puremedical.world/>

On Wed, 3 Nov 2021 at 10:12, 5.1.2.e @igj.nl> wrote:

Geachte heer 5.1.2.e

De Inspectie Gezondheidszorg en Jeugd (hierna: inspectie) ziet namens de overheid toe op de naleving van de wet- en regelgeving op het gebied van de gezondheidszorg, waaronder de Wet medische hulpmiddelen (Wmh).

Op basis van het bovenstaande komt de inspectie, t.w. de heer 5.1.2.e en de heer 5.1.2.e bij Pure Medical (PGL Finance B.V.) langs voor een inspectiebezoek.

Het bezoek zal plaatsvinden op **donderdag 4 november a.s. om 14.30 uur**, locatie de Olivier van Noortlaan 120 te Vlaardingen.

Kunt u vandaag deze afspraak bevestigen door middel van een reply op deze e-mail en mij laten weten wie er vanuit Pure Medical (PGL Finance B.V.) bij het inspectiebezoek zal aansluiten.

Als er geen bestuurder aanwezig kan zijn, wilt u dan aangeven wie namens het bestuur

gemachtigd is om te spreken met de inspectie.

Coronavirus COVID-19: wij respecteren de richtlijnen van het kabinet en het RIVM. Kunt u daarom vooraf aangeven of:

- u de beschikking heeft over een voldoende geventileerde ruimte waarin het gesprek kan plaatsvinden en waarin de afstand van tenminste 1,5 meter kan worden gewaarborgd;
- er bijzondere maatregelen zijn waar wij rekening mee moeten houden bij ons bezoek, zoals een coronaprotocol van uw organisatie - gebruik van persoonlijke beschermingsmiddelen, verplichte looprichting etc.?

Wij willen u ook vragen ons vooraf op de hoogte te stellen wanneer u of andere deelnemers aan het gesprek verkoudheidsklachten, koorts of benauwdheidsklachten hebben of een besmetting met het coronavirus is vastgesteld.

Tot slot verwijzen wij u naar de website <https://www.igj.nl/zorgsectoren/medische-technologie/achtergrond-toezicht-medische-technologie>. Deze pagina belicht onder andere de verschillende soorten inspectiebezoeken die worden uitgevoerd.

Met vriendelijke groet,

5.1.2.e

5.1.2.e IGJ

.....  
**Afdeling Medische Technologie**  
**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 | 3521 AZ Utrecht | the Netherlands  
Postbus 2518 | 6401 DA Heerlen | the Netherlands

.....  
**M +31 (0)6 5.1.2.e**  
5.1.2.e [@igj.nl](mailto:5.1.2.e@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
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.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....



Stadsplateau 1  
3521 AZ Utrecht  
Postbus 2518  
6401 DA Heerlen  
T 088 120 5000  
www.igj.nl

**Inlichtingen bij**

5.1.2.e  
5.1.2.e @igj.nl  
T 088-1205000

# verslag

**Datum**

5 november 2021

Omschrijving	Bezoekverslag Pure Medical B.V. rond SARS-CoV-2-diagnostiek
Vergaderdatum en -tijd	4 november 2021, 14:30-16:00
Vergaderplaats	Olivier van Noortlaan 120 in Vlaardingen
Aanwezig	5.1.2.e 5.1.2.e 5.1.2.e 5.1.2.e , 5.1.2.e 5.1.2.e , 5.1.2.e
Afwezig	
Kopie aan	

Geachte heer 5.1.2.e ,

Op 4 november jl. bracht de Inspectie Gezondheidszorg en Jeugd (IGJ) een herbezoek aan Pure Medical B.V. (hierna: PM) op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Reden voor het bezoek was een nieuwe melding over PM die bij de IGJ was binnengekomen. Deze melding staat bij de IGJ geregistreerd onder nummer 5.1.2.e . De melding betrof een aantal zaken die betrekking hebben op de kwaliteit van de werkzaamheden die gedaan worden in het kader van SARS-CoV-2-diagnostiek. Een van de toezichttaken van de IGJ is het toezicht op de kwaliteit van de laboratoriumdiagnostiek in het algemeen en tijdens de huidige coronacrisis het toezicht op de kwaliteit van de uitvoering van SARS-CoV-2 diagnostiek bij die laboratoria die daarvoor door de overheid zijn aangewezen. Uw organisatie is daar een van.

Tijdens ons eerste bezoek op 14 juli jl. gaf PM aan dat voor de uitvoering van SARS-CoV-2 diagnostiek in het gebouw aan de Olivier van Noortlaan 120 in Vlaardingen de handelingen zich beperken tot monstervoorbereiding. Meer specifiek; het uitvullen van buizen met lysisbuffer voor GGD's, het ontvangen van buizen afkomstig van GGD's en overpipetteren van sample in een 96 wells systeem. De daadwerkelijke analyse; isolatie, nucleïnezuuramplificatie en detectie worden bij Novogenia in Oostenrijk, een ISO 15189 geaccrediteerd lab, uitgevoerd. Het bezoek aan het laboratorium van PM door de Inspectie op 14 juli bevestigd dit beeld.

Op 2 november jl. heeft de Inspectie een signaal ontvangen over mogelijke tekortkomingen van uitgevoerde SARS-CoV-2 PCR testen, uitgevoerd aan de Olivier van Noortlaan 120 in Vlaardingen. Dit geeft een ander beeld van de werkzaamheden die de inspectie had tijdens het bezoek op 14 juli, dat zich beperkte tot alleen monstervoorbereiding. Dit was de hoofdreden voor de Inspectie om naar aanleiding van deze melding een herhaald inspectiebezoek af te leggen.

### Bevindingen

De Inspectie heeft tijdens het bezoek onderzocht of de uitvoering van de SARS-CoV-2 diagnostiek volgens de geldende wet- en regelgeving en terzake doende richtlijnen verloopt. In dit gespreksverslag proberen wij onze bevindingen van het bezoek en het gesprek zo volledig mogelijk weergegeven.

Tijdens het bezoek op heeft de Inspectie een inleidend gesprek gehad met de heer 5.1.2.e (5.1.2.e PGL Finance B.V.) en de heer 5.1.2.e (5.1.2.e 5.1.2.e ). Vervolgens was er een rondleiding op het laboratorium en heeft er een afsluitend gesprek plaatsgevonden.

De Inspectie heeft het onderstaande waargenomen/vernomen.

- De heer 5.1.2.e begint het gesprek met het overleggen van een tweetal e-mails, correspondenties afkomstig van mevrouw 5.1.2.e. Mevrouw 5.1.2.e is een 5.1.2.e van PM. In de eerste e-mail ontvangen op 19 oktober 2021, nodigt mevrouw 5.1.2.e de heer 5.1.2.e uit voor een gesprek over een samenwerking bij het opzetten van het PCR laboratorium. In de tweede e-mail ontvangen op 3 november 2021, is mevrouw 5.1.2.e van mening dat PM analytische fraude pleegt.

### Samenwerkingspartners en locaties van laboratorium werkzaamheden

- De heer 5.1.2.e geeft aan dat PM op de locatie aan Olivier van Noortlaan 120 in Vlaardingen ook SARS-CoV-2 diagnostiek op GGD samples uitvoert. Deze situatie is wezenlijk anders ten opzichte van de situatie zoals de Inspectie aantrof tijdens het bezoek van 14 juli jl., waar de handelingen van PM zich beperkte tot monstervoorbereiding. 5.1.2.e geeft aan geen andere samenwerkingspartners te hebben m.b.t. het aanleveren van samples voor SARS-CoV-2 diagnostiek. De heer 5.1.2.e geeft aan dat op dit moment ongeveer 10% van de samples in Vlaardingen en dat 90% van de samples in Oosterrijk bij Novogenia worden bepaald.
  - De heer 5.1.2.e geeft aan de exacte cijfers aan de inspectie te zullen versturen (gespecificeerd per week).
- De heer 5.1.2.e geeft aan dat PM een contract voor het uitvoeren van SARS-CoV-2 diagnostiek heeft met Dienst Testen. Dit contract verliep tot mei 2021 en is met addendum verlengt tot 3 weken na definitieve toekenning van de nieuwe aanbesteding. De inspectie vraagt of het uitvoeren van SARS-CoV-2 diagnostiek in het laboratorium in Vlaardingen in overeenstemming is met het contact van Dienst Testen. De heer 5.1.2.e kan deze vraag tijdens het inspectiebezoek niet beantwoorden.
  - Hij geeft aan dat hij bij Dienst Testen gaat informeren of hij het contract en/of deze details met de inspectie mag delen. Hij zal de inspectie hierover informeren.
- De heer 5.1.2.e geeft aan dat PM meegedaan heeft in de nieuwe aanbestedingsronde maar dat dit niet toegekend is.

### Competenties

- PM heeft op dit moment ongeveer twintig werknemers in dienst. De inspectie vraagt of dat de taken, bevoegdheden, verantwoordelijkheden en bekwaamheidseisen voor personeel schriftelijk zijn vastgelegd. 5.1.2.e geeft aan dat dit is opgenomen in het kwaliteitsmanagementsysteem (KMS).
- Voor de PM aangeboden SARS-CoV-2 diagnostiek ligt de vakinhoudelijke verantwoordelijkheid bij moleculair medisch microbioloog (MMM) dr. 5.1.2.e Melchers (Radboud UMC). Een 5.1.2.e is medisch verantwoordelijk.
  - PM zal de voor- en achternaam van de verantwoordelijk 5.1.2.e aan de inspectie doorgeven inclusief zijn contactgegevens en BIG-nummer.
- De minimale criteria voor het uitvoeren van moleculaire diagnostiek is een moleculair biologische opleiding (MBO, HBO of academisch opgeleid). PM geeft aan dat de medewerkers hoofdzakelijk HBO en hoger zijn opgeleid.
- Voor de GGD SARS-CoV-2 diagnostiek geanalyseerd door Novogenia ligt de vakinhoudelijke verantwoordelijkheid voor moleculaire diagnostiek bij Novogenia (Oostenrijk). Een MMM verbonden aan Novogenia in Oostenrijk is verantwoordelijk voor de uitslagen die door Novogenia worden geproduceerd.

### Prestaties en verificatie

- PM heeft op 9 oktober een verklaring van prestatie voor de detectie van SARS-CoV-2 middels RT-PCR van het RIVM gekregen.
  - Specificiteits rondzendingen
  - Sensitiviteits controle met goed resultaat
  - Confirmatie 10 positieve en 10 negatieve monsters met correct resultaat.
- PM geeft aan dat voor SARS-CoV-2-diagnostiek op locatie Vlaardingen het gebruik maakt van 4 verschillende workflows.
- PM geeft aan dat alle gebruikte apparatuur en reagentia CE-IVD zijn gemarkeerd en dat de betreffende workflows zijn geverifieerd op de locatie Vlaardingen.
  - PM zal de inspectie een verificatie rapport toesturen en een tabel met alle gebruikte apparatuur en reagentia.
- PM geeft aan dat voor de externe kwaliteitsbewaking deelneemt aan de RIVM rondzendingen en periodieke verificatie bij Novogenia uitvoert, een ISO 15189 geaccrediteerd laboratorium.
- PM geeft aan dat er procedures zijn vastgelegd waaraan de kwaliteitscontroles moeten voldoen en dat er een procedure is om vrijgave van patiënten resultaten in geval van een afwijking in de kwaliteitscontrole te voorkomen.

### Kwaliteitsmanagementsysteem

- De heer 5.1.2.e geeft aan dat er voor het laboratorium geen accreditatie ten behoeve van een kwaliteit management systeem (hierna: KMS) op grond van ISO 9001 of ISO 15189 aanwezig is, maar dat er wel gewerkt wordt volgens de vigerende standaarden voor moleculair diagnostische laboratoria. PM houdt daarbij de ISO-norm 15189:2013 aan als leidraad voor het functioneren en handelen. Verder geeft de heer 5.1.2.e aan dat i.s.m. een extern bureau (Cartese) het ISO 15189 accreditatie proces is

ingezet. De aanvraag is volgen de heer 5.1.2.e ingediend bij RvA en heeft PM een verklaring van volledigheid van de RvA gekregen.

- PM zal de verklaring van volledigheid van de RvA naar de inspectie toe sturen.
- De heer 5.1.2.e geeft aan dat PM beschikt over Cloud gebaseerd KMS systeem (Zenya) voor beheer van o.a. het kwaliteitshandboek en procedures.
  - De Inspectie wordt toegezegd toegang te krijgen tot dit KMS systeem.
- De heer 5.1.2.e geeft aan dat PM voor het meten van samples in Vlaardingen het niet beschikt over (een volledig) een risico inventarisatie- en evaluatie (RI&E) betreffende SARS-CoV-2 diagnostiek op GGD samples. De samples die gemeten worden in Oostenrijk vallen onder de RI&E van Novogenia.

#### Laboratorium inrichting

- PM heeft een aparte ruimte voor verwerking van patiënten materialen en pre-amplificatiehandelingen (RNA isolatie).
- Voor aerosol vormende handelingen maakt PM gebruik van zuurkasten.
- In een tweede ruimte vindt de reverse transcriptase, nucleïnezuuramplificatie en detectie plaats. Deze stappen vinden plaats in een gesealde plaat. De gesealde platen worden afgevoerd in kunststof vaten voor ziekenhuisafval. De vaten zijn hermetisch af te sluiten door middel van een kitrand in de deksel.
- PM geeft aan dat kwaliteitscontrole op temperatuur gevoelige reagentia geschied d.m.v. data loggers op koel- en vrieskasten.

De hierboven beschreven bevindingen zijn opgemaakt uit het inspectiebezoek van 4 november 2021. Zoals tijdens het inspectiebezoek afgesproken ontvangt de inspectie graag uiterlijk woensdag **15 november 2021** de aanvullende informatie en toegang tot het KMS systeem. De inspectie stelt u ook in de gelegenheid te reageren op feitelijke onjuistheden in dit gesprekverslag en ontvangt uw reactie hierop graag uiterlijk **17 november 2021**.

De inspectie vraagt u om uw reactie op bovenstaande vragen uiterlijk te sturen naar meldpunt@igj.nl en 5.1.2.e @igj.nl onder vermelding van ons referentienummer 5.1.2.e . Wanneer de inspectie binnen de gestelde termijn geen reactie van u heeft ontvangen, stelt de inspectie het definitieve gesprekverslag vast.

# Buiten reikwijdte verzoek

---

**Van:** 5.1.2.e <[redacted]@minvws.nl>  
**Datum:** vrijdag 05 nov. 2021 8:13 AM  
**Aan:** 5.1.2.e <[redacted]@igj.nl>, \_Dienstpostbus IGJ Meldpunt <[redacted]@igj.nl>  
**Kopie:** 5.1.2.e <[redacted]@minvws.nl>, 5.1.2.e <[redacted]@minvws.nl>  
 5.1.2.e <[redacted]@minvws.nl>, 5.1.2.e <[redacted]@minvws.nl>, 5.1.2.e <[redacted]@minvws.nl>  
 5.1.2.e <[redacted]@minvws.nl>  
**Onderwerp:** RE: Ons referentienummer: 5.1.2.e

Goedemorgen heer 5.1.2.e,

In antwoord aan uw schrijven aan de heer 5.1.2.e, stuur ik u hierbij in de bijlage (1) de overeenkomsten met PGL en (2) het aantal samples wat PGL verwerkt heeft per GGD en per week.

Mocht dit nog vragen oproepen dan houd ik me van harte aanbevolen.

Met vriendelijke groet,

5.1.2.e

5.1.2.e Strategische Inkoop en Contract Management



.....  
**Ministerie van Volksgezondheid, Welzijn en Sport**

Parnassusplein 5 | 2511 VX Den Haag | Etage  
 Postbus 20350 | 2500 EJ | Den Haag

.....  
 tel. 06-5.1.2.e

5.1.2.e <[redacted]@minvws.nl>

<http://www.rijksoverheid.nl>

---

**Van:** 5.1.2.e <5.1.2.e@igj.nl>

**Verzonden:** woensdag 3 november 2021 08:30

**Aan:** 5.1.2.e @minvws.nl>  
**cc:** 5.1.2.e @igi.nl>  
**Onderwerp:** Ons referentienummer: 5.1.2.e

Geachte heer 5.1.2.e,

De Inspectie Gezondheidszorg en Jeugd (hierna: de inspectie) ziet namens de overheid toe op de naleving van de wet- en regelgeving op het gebied van de gezondheidszorg, waaronder de Wet kwaliteit, klachten en geschillen zorg (Wkkgz), de Wet op de medische hulpmiddelen (Wmh) en het Besluit in-vitro Diagnostica (BIVD). In het kader van haar toezichthoudende taak is de inspectie een onderzoek gestart naar de rol van PGL Finance B.V. (handelsnamen; PGL Finance B.V., Pure CBD Solutions, Pure Medical) in de diagnostiek van COVID-19. Binnen het bestek van dit onderzoek heeft de inspectie een tweetal vragen voor dienst testen.

Vragen:

- Graag ontvangt de inspectie de vigerende contractuele afspraken tussen dienst testen en PGL Finance B.V.; dat wil zeggen de contracten die van toepassing zijn vanaf 1 september 2021
- Hoeveel samples voor moleculaire SARS-CoV-2-diagnostiek (PCR) zijn er in de maanden september en oktober 2021 vanuit GGD locaties aan Pure Medical BV verstuurd. (graag gespecificeerd per GGD locatie en per weeknummer).

Procedure

De inspectie vraagt u om uw reactie op bovenstaande vragen uiterlijk binnen één week te sturen naar [meldpunt@igi.nl](mailto:meldpunt@igi.nl) er 5.1.2.e @igi.nl onder vermelding van ons referentienummer 5.1.2.e.

Vragen?

Ik ga ervan uit dat ik u hiermee voldoende heb geïnformeerd. Heeft u nog vragen, neem dan contact op met ons meldpunt. Het Meldpunt IGJ is bereikbaar van maandag tot en met vrijdag tussen 09.00 en 17.00 uur op telefoonnummer (088) 120 50 00. U kunt ook een e-mail sturen naar [meldpunt@igi.nl](mailto:meldpunt@igi.nl). Vermeld daarbij alstublieft ons referentienummer.

Met vriendelijke groet,

5.1.2.e

5.1.2.e

.....  
**Afdeling Medische Technologie**  
**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 | 3521 AZ Utrecht  
Postbus 2518 | 6401 DA Heerlen

.....  
**T:** 088 120 5000

**5.1.2.e** @igi.nl

[www.igi.nl](http://www.igi.nl)

Twitter @IGJnl | LinkedIn IGJ

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....





Ministerie van Volksgezondheid,  
Welzijn en Sport

**ADDENDUM BIJ OVEREENKOMST TUSSEN DE STAAT DER NEDERLANDEN  
EN PGL Finance B.V..  
per 26 april 2021**

**DE ONDERGETEKENDEN:**

- I. De **STAAT DER NEDERLANDEN**, te deze vertegenwoordigd door de minister van Volksgezondheid, Welzijn en Sport, gevestigd te 's Gravenhage, namens deze de heer 5.1.2.e, 5.1.2.e, van dienst van de Dienst Testen, hierna te noemen de "Minister"  
*en*
- II. de besloten vennootschap met beperkte aansprakelijkheid PGL Finance BV, gevestigd aan de Bieslandseweg 2, 2645 BM Delftgauw, ingeschreven bij de Kamer van Koophandel onder nummer 27352865, rechtsgeldig vertegenwoordigd door de heer 5.1.2.e, 5.1.2.e, hierna te noemen "Opdrachtnemer"

hierna gezamenlijk te noemen: Partijen:

Minister en Opdrachtnemer gezamenlijk ook te noemen "Partijen", en eenieder als "Partij",

**IN AANMERKING NEMENDE DAT:**

- a. Partijen de overeenkomst voor de verlening van logistieke en diagnostieke diensten met betrekking tot COVID-19 PCR RT testen voor de periode 4 januari 2021 tot en met 25 april 2021 hebben getekend, hierna "de Overeenkomst";
- b. Partijen vaststellen en indien noodzakelijk overeenkomen dat de Overeenkomst op het moment van ondertekenen van dit addendum, hierna: het Addendum, van kracht en rechtsgeldig is;
- c. de overeenkomst een looptijd heeft tot 25 april 2021, op welke datum de overeenkomst van rechtswege eindigt tenzij tot verlenging wordt overgegaan;
- d. de Minister onder de in overeenkomst genoemde voorwaarden en condities een garantie heeft afgegeven voor het geval dat het daadwerkelijke volume ("Real Volume") per dag lager is dan het Gegarandeerde volume ("Guaranteed Volume") per dag. In dat geval mag de Opdrachtnemer de prijs voor het Real Volume alsmede de prijs voor het verschil in volume tussen het Real Volume and Guaranteed Volume in rekening brengen;

5.1.2.e



- e. er op dit moment nog steeds dringend behoefte is aan logistieke en diagnostische diensten met betrekking tot het uitvoeren van Covid-19 PCR RT testen vanwege het voortduren van de Covid-19 crisis en het mogelijke risico van een derde golf in verband met diverse opkomende varianten van het Covid-19 virus;
- f. het dan ook noodzakelijk is gebleken de overeenkomst te verlengen en in het kader van de transitieperiode op een aantal punten aan te passen;
- g. de **eerste aanpassing** betreft de verlenging van de looptijd;
- h. de **tweede aanpassing** betreft de aanpassing van de Guaranteed Volume in de periode van verlenging opgenomen in bijlage A "Schedule 1 (Services, Laboratories, Volumes and Price)" onder punt 6 "Volumes of Services (tests per day)";
- i. de **derde aanpassing** betreft de aanpassing van de prijs in de periode van verlenging zoals opgenomen in bijlage A "Schedule 1 (Services, Laboratories, Volumes and Price)" onder punt 7 "Pricing table";
- j. de **vierde aanpassing** betreft de verduidelijking van een intrekken of schorsing van het gebruik van een laboratorium (artikel 5);
- k. de **vijfde aanpassing** betreft verduidelijking met betrekking tot onderzoek in opdracht van de Minister;
- l. de **zesde aanpassing** betreft verduidelijking van opslag en vernietiging van Samples;
- m. de **zevende aanpassing** betreft verduidelijking ten behoeve van Schedule 3. Key Performance Indicators;
- n. Partijen bovenstaande aanpassingen in onderhavig addendum wensen vast te leggen:

## KOMEN HET VOLGENDE OVEREEN:

### 1. Algemeen

Dit addendum maakt na 25 april 2021 door Partijen integraal onderdeel uit van de Overeenkomst. Woorden gespeld met een hoofdletter (in het Engels of Nederlands) in dit addendum hebben dezelfde betekenis als aan die woorden in de Overeenkomst is gegeven.

5.1.2.e





## 2. Wijzigen artikel 2.1 van de Overeenkomst

**Artikel 2.1 van de Overeenkomst luidt tot 25 april 2021**

### **Formation and duration of the Contract**

The Contract will run from the date of signature of this Contract until 25<sup>th</sup> April 2021 and will then automatically expire without any notice being required, unless it is extended by mutual written agreement 1 (one) month in advance the latest by period(s) of 1 (one) month. The Minister may decide on any such extension in his sole discretion and will not be under any obligation to agree to an extension.

**Artikel 2.1 van de Overeenkomst luidt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding:**

### **Formation and duration of the Contract**

The Contract will run from the date of signature of this Contract until July 15 2021, or if later, 21 days after the tender award has been granted and will then automatically expire without any notice being required latest by period(s) of 1 (one) month. The Minister may decide on any such extension in his sole discretion and will not be under any obligation to agree to an extension.

## 3. Wijziging Bijlage A, punt 6 Volume and Services

**Artikel 3.1 Bijlage A punt 6 Volume and Services luidt tot 25 april 2021**

[as of Regarding up to long run]

The Parties have agreed to build up to the Target capacity as described in table below and the Minister agrees to a Guaranteed volume in the following way:

Target capacity build up and Garanteed volume		
Milestones	Target Capacity per day	Garanteed volume per day*

**Bijlage A punt 6 Volume and Services luidt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding**

[As of Regarding up to long run]

The Parties have agreed to build up to the Target capacity as described in table below and the Minister agrees to a Guaranteed volume in the following way:

5.1.2.e



Predicated percentage guaranteed volume			
# month of the runtime of the addendum	Target Capacity per day*	Percentage guaranteed	Guaranteed volume per day*
Start 26 April 2021	20.000	20%	4.000
May 2021	20.000	15%	3.000
June 2021	20.000	10%	2.000
Till 15 July 2021	20.000	10%	2.000
<b>Ultimate Capacity* : 50.000 tests per day</b>			
Maximum contracted volume (Target) = 20.000 test per day*			

)\* Measured as average per calendar week

#### 4. Wijziging bijlage A "Schedule 1: Services, Laboratories, Volumes and Price" onder punt 7 "Pricing Table":

**Artikel 4.1 Bijlage A onder punt 7 "Pricing Table" luidt tot 25 april 2021**

##### **Pricing Table**

Pricing table (excl. VAT) based on bandwidths of Volumes			
Till 10.000 tests per day: 65 Euro, after 10K each extra 5.000 tests price decreases till 50 Euro			
NUMBER OF REPORTED TESTS PER DAY*		PRICE PER REPORTED TEST	
Minimum	Maximum		
0	9.999	€	65,00
10.000	14.999	€	62,00
15.000	19.999	€	57,50
20.000	24.999	€	53,00
>25.000	>25000	€	50,00

)\* Measured as average per calendar week

For the first 10.000 reported tests Contractor will be paid 65 euro, for the next 5.000 reported tests 62 euro, for the next 5.000 reported tests 57,50 euro, for the next 5.000 reported tests 53 euro and the number of reported tests thereafter 50 euro per reported test.

# 5.1.2.e





**Artikel 4.1 Bijlage A onder punt 7 "Pricing Table" luidt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding**

**Pricing Table**

Pricing table (excl. VAT)		
NUMBER OF REPORTED TESTS PER DAY*		PRICE PER REPORTED TEST
Minimum	Maximum	
0	No maximum	€ 50,00

Contractor will be paid 50 euro, per reported tests. [for the sake of clarity: For – test: to be deleted]

**5. Wijziging artikel 5.2 en toevoeging als artikel 5.3 (Quality)**

**Artikel 5.2 luidt tot 25 april 2021**

5.2 During the utilization of the Laboratory the initial quality requirements as referred to in article 5.1 have to be maintained or improved. As soon as Contractor foresees that the Laboratory cannot meet these minimum requirements anymore Contractor shall immediately inform the Minister. In that case the Minister is entitled to terminate the contract with immediate effect without any prior notice being required, by registered letter and without being due any compensation for lost income or other damage by the Contractor.

**Artikel 5.2 luidt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding**

5.2 During the utilization of the Laboratory the initial quality requirements as referred to in article 5.1 have to be maintained or improved. As soon as Contractor foresees that the Laboratory cannot meet these minimum requirements anymore Contractor shall immediately inform the Minister. In that case the Minister is entitled to withdraw or suspend its approval for that particular Laboratory resulting in the fact that Contractor is not any longer allowed to utilize that Laboratory for the Diagnostic test. In case no Laboratories are allowed to provide the Services, the Contract may be terminated with immediate effect by (electronic) letter without any compensation for lost of income or other damage by the Contractor

**Artikel 5.3 wordt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding**

5.1.2.e



**Waarbij voormalig artikel 5.3, 5.4 en 5.5 respectievelijk opschuiven naar 5.4, 5.5 en 5.6.**

5.3 If the Minister has suspended its approval as mentioned in the previous the Minister will not allocate any Sample to the Laboratory. If the Minister terminates the suspension after resolving the quality problem underlying the suspension, the allocation of the Samples will resume two weeks after the suspension has ended.

**Artikel 5.4 (nieuw 5.5) luidt vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding**

5.5 If during such regular assessment or audit it appears that a Laboratory is no longer meeting the quality requirements as referred to in 5.1, the Minister is entitled to withdraw the approval for that particular Laboratory resulting in the fact that Contractor is not any longer allowed to utilize that Laboratory for the Diagnostic tests.

## **6. Verduidelijking met betrekking tot onderzoek in opdracht van de Minister:**

Bijlage A "Schedule 1: Services, Laboratories, Volumes and Price" onder punt 1 "Services" Toevoeging extra bullit bij 1. Services:

- Cooperation in relation to specific research commissioned by the Minister

Bijlage B "Schedule 2: Operational agreements" onder punt 1 "Organization" Toevoeging extra subbullit bij bullit 5 "contractor is responsible for":

- o collection of positive Samples and transport of these Samples to a location for research

Bijlage B "Schedule 2: Operational agreements" toevoeging van punt 7 "Collection of Samples and Transport to location for research":

- In case of research commissioned by the Minister, the Contractor will select and pack the Samples and transport them to a location designated by the Minister.

## **7. Verduidelijking ten behoeve van opslag en vernietiging van Samples:**

**bijlage B "Schedule 2: Operational agreements" onder punt 8 "Storage and destruction of Samples" luidt tot 25 april 2021:**

- Negatively and undetermined tested Samples will be appropriately destroyed by Contractor 3 (three) days after publication of the test result of the CoronIT.

5.1.2.e





- Positively tested Samples will be appropriate and traceable stored by Contractor for 2 (two) months after publication of the test result of the Samples in CoronIT.

**bijlage B "Schedule 2: Operational agreements" onder punt 8 "Storage and destruction of Samples" vanaf 26 april 2021 tot 15 juli 2021, dan wel indien later, 21 dagen na de gunning onder de aanbesteding:**

- Negatively and undetermined tested Samples must be appropriately destroyed by Contractor 3 (three) days after publication of the test result of the Samples in CoronIT.
- Positively tested Samples must be appropriate and traceable stored by Contractor for 2 (two) months after publication of the test result of the Samples in CoronIT, after which the Samples must be appropriately destroyed by Contractor

**8. Verduidelijking ten behoeve van Schedule 3. Key Performance Indicators**

**Timely information (< 2 hours after arrival of Samples in Lab) of Sampling hubs/LCDK about disturbances leading to delays in publication of test results**

- bonus 5 points in case of less than two – according the Minister well-founded – notifications by the Sampling hubs per week. These notifications concern alleged deviation in the performance of the Agreement and must be communicated in writing ( email) to the Contractor and Minister ( via the Testing Service Ops [ops@lcdk.nl](mailto:ops@lcdk.nl)).

**Timely information (> 2 hours in advance) of Sampling hubs about delays in supplies or Sample collection**

- bonus 5 points in case of less than two – according the Minister well-founded – notifications by the Sampling hubs per week. These notifications concern alleged deviation in the performance of the Agreement and must be communicated in writing ( email) to the Contractor and Minister ( via the Testing Service Ops [ops@lcdk.nl](mailto:ops@lcdk.nl)).

**No interruption of testing activities caused by shortage in agreed safety stocks**

- bonus 5 points if no disturbance of sample taking/testing process

**9. Overig**

Alle andere voorwaarden en (onderdelen van) bepalingen als opgenomen in de Overeenkomst blijven onverkort van kracht, tenzij daarvan in dit addendum expliciet wordt afgeweken.

5.1.2.e



Ministerie van Volksgezondheid,  
Welzijn en Sport

**ALDUS OVEREENGEKOMEN EN**

I. De Staat der Nederlanden, de minister van Volksgezondheid, Welzijn en Sport,  
getekend te Leiot op 28 april 2021

namens deze,

5.1.2.e

De heer

5.1.2.e

enst Testen

II. PGL Finance B.V.

getekend te

Vlaardingen

op

0-4-2021

namens deze,

5.1.2.e





Ministerie van Volksgezondheid,  
Welzijn en Sport

**Contract number: .....**

**PUBLIC SERVICE CONTRACT ("CONTRACT") FOR THE  
PROVISION OF LOGISTIC AND COVID-19 TESTING SERVICES**

**BETWEEN**

**THE STATE OF THE NETHERLANDS  
THE MINISTRY OF HEALTH, WELFARE AND SPORTS**

**AND**

**PGL Finance BV**

**The undersigned:**

1. The State of the Netherlands, which has its seat in The Hague, represented by the Minister of Health, Welfare and Sport, Directorate-General for Public Health, legally represented in this matter by [REDACTED] Head of Testing Services hereinafter referred to as the "Minister",  
  
and
2. The private limited company PGL Finance BV, which has its registered office at Bieslandseweg 2, 2645BM Delfgauw, the Netherlands, registered with the Chamber of Commerce under number 27352865, legally represented in this matter by [REDACTED], hereinafter referred to as "Contractor",

Each party also referred to as "Party", and both parties together as "Parties",

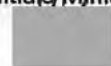
**WHEREAS:**

- a) the Minister has a facilitating role in infectious disease control on the basis of the Public Health Act (Wpg). Pursuant to Article 3(1) of the Wpg, the Minister has the task to promote the quality and efficiency of public health care. In addition, he is responsible for the maintenance and improvement of the so-called support structure. On the basis of article 7(1) of the Wpg, the Minister is also in charge of combating an infectious disease from Group A, such as Covid-19;
- b) The Minister therefore has engaged a number of parties to provide logistic- and diagnostic services in order to urgently provide temporarily additionally needed laboratory capacity to test samples at (community) sampling hubs across the Netherlands for the COVID-19 virus;
- c) Contractor is an innovative diagnostic knowledge center, and offers a wide range of diagnostics and laboratory services in the field of clinical chemistry, immunology and microbiology, including COVID-19;





- d) Contractor is prepared to do everything reasonable to urgently provide temporary additional laboratory capacity in an efficient and cost-effective way;
- e) As it is strictly necessary for reasons of extreme urgency the Minister, and in accordance with article 2.32, section 1, paragraph c of the Dutch Public Procurement Act 2012 ('Dutch PPA' or 'Aanbestedingswet 2012'), the Minister awards this Contract to Contractor. The Minister has awarded this Contract by a negotiated procedure without publication, as it is strictly necessary where, for reasons of extreme urgency brought about by events related to the COVID 19 pandemic which were unforeseeable by the Minister, the time limits for the open or restricted procedures or competitive procedures with negotiation cannot be complied with (also see EC 2020/C 108 I/01);
- f) the circumstances invoked to justify extreme urgency shall not in any event be attributable to the Minister. The events were unforeseeable by the Minister, because the estimated need for test capacity was reached months earlier than expected;
- g) The extreme urgency makes compliance with general deadlines impossible because the time that is needed for compliance will result in a growing shortage of test capacity. There is a causal link between the unforeseen event and the extreme urgency because the gap between the official estimation of the needed test capacity and the current rise in demand for test capacity is growing every day. This procedure is only used by the Minister in order to cover the gap until more stable solutions can be found;
- h) Parties have discussed the main conditions for the provision of test volumes by Contractor;
- i) Parties wish to lay down their agreements in this Contract. With the signature of this Contract all previously made arrangements are no longer valid and are replaced with the arrangements in this Contract.



## **AGREE AS FOLLOWS:**

### **Definitions**

The following terms are written with initial capitals in this Contract and defined as follows:

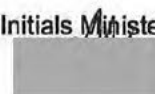
Contract	this contract as defined in article 1.7
CoronIT	CoronIT is the name of registration software
Diagnostic test	detection of SARS-CoV-2 RNA by RT-PCR
First production date:	the date that all processes for providing the Services are in place (week n)
Guaranteed volume	the minimum number of Samples as percentage of the Target capacity, guaranteed by the Contractor
Laboratories	laboratories meeting the quality requirements of this Contract, performing Covid-19 Diagnostics tests
Operational agreements	the agreements as laid down in Schedule 2
RIVM	Rijksinstituut voor Volksgezondheid en Milieu, meaning the National Institute for Public Health and the Environment
Services	the services as defined in Schedule 1, "Services"
Samples	sample material of visitors of the Sample hubs
Sampling hubs	centres where Samples are taken
Sampling kits	kits containing all materials needed for the taking of Samples
Target capacity	the volume the Minister and Contractor agreed upon as reserved volume for use by the Minister
Ultimate capacity	the ultimate volume Contractor can offer to the Minister in the long run
Volumes	amount of Services as defined in Schedule 1, 'Volumes of Services'





## **1. Object of the Contract**

- 1.1 Parties agree on the provision by Contractor of temporarily additionally needed diagnostic and logistic services ("Services") in certain volumes ("Volumes") for the duration of this Contract including the supply to Sampling hubs of Sampling Kits and labels, tube racks and containers.
- 1.2 Contractor guarantees to provide to the Minister the Target capacity and the Services under the conditions as set out in this Contract and in specific Schedule 1 (Services, Laboratory, Volumes and Price), attached to this Contract as Annex A.
- 1.3 The Minister is free to order lesser Volumes than the Target capacity and/or only part of the Services as described in Schedule 1.
- 1.4 The Minister guarantees payment to Contractor of 30% of the Target capacity (the Guaranteed Volume), by way of compensation to the Contractor for the reservation of the Target capacity per day as provided for in this article, on the condition that Contractor performs its other obligations in conformity with this Contract.
- 1.5 On request of the Minister Contractor is prepared to explore an increase of the Volumes to the Ultimate capacity as mentioned in Schedule 1 Services, Laboratory, Volumes and Price) attached to this Contract as Annex A. If Parties agree to increase the Target capacity towards the Ultimate capacity, the new Volumes will be the new Target capacity.
- 1.6 Parties will comply with the operational organisation arrangements as mentioned in Schedule 2 Operational Arrangements attached to this Contract as Annex B and the Key Performance indicators as mentioned in Schedule 3 attached to this Contract as Annex C.
- 1.7 The following documents are an integral part of this Contract. In the event of inconsistencies, a higher ranked document takes precedence over a lower ranked document:
  1. this document;
  2. Annex A: Schedule 1 – Services, Laboratory, Volumes and Price;
  3. Annex B: Schedule 2 – Operational agreements;
  4. Annex C: Schedule 3 – Key Performance Indicators;
  5. Annex D: General Government Purchasing Conditions 2018 (ARIV 2018);
  6. Annex E: Financial Brochure e-invoicing government ("Financiele Bijsluiter").



## **2. Formation and duration of the Contract**

- 2.1 The Contract will run from the date of signature of this Contract until 25<sup>th</sup> April 2021 and will then automatically expire without any notice being required, unless it is extended by mutual written agreement 1 (one) month in advance the latest by period(s) of 1 (one) month. The Minister may decide on any such extension in his sole discretion and will not be under any obligation to agree to an extension.
- 2.2. The Guarantee as mentioned in article 1.6 will only be invoked after the mutually agreed First production date.

## **3. Price and invoicing**

- 3.1 The agreed price to be paid to Contractor for all Services to be performed by Contractor ("Price") and the Volumes to be met for the Services are laid down in Schedule 1.
- 3.2 The Price is exclusive of VAT.
- 3.3 The Price includes all Services as mentioned in Schedule 1.
- 3.4 Contractor will invoice every 2 (two) weeks for the attention of the Minister electronically in the manner prescribed in annex D ("Financiële Bijsluiter").
- 3.5 Contractor will send a copy of the invoice together with a print from CoronIT showing the Volumes tested during the invoiced period, together as attached pdf-files via 1 (one) e-mail message to OGZ-Covid@rivm.nl.
- 3.6 Contractor is allowed to invoice only Volumes actually tested (Real volume) covered by the invoice.
- 3.7 In case the Real volume per day is less than the Guaranteed volume per day, as defined in this Contract and Annexes, Contractor is allowed to invoice the Price for the Real volume as well as the difference between the Guaranteed volume and the Real volume. In this case Contractor will inform the Minister of this situation via e-mail message to secretariaat@lcdk.nl before sending in the invoice as mentioned in article 3.5
- 3.8 Invoices will be paid with a maximum payment term of 30 (thirty) days from the date of receipt of the invoice.
- 3.9 The Minister will check the invoices on a regular basis. Incorrect invoices will be discussed with Contractor and in mutual consent be corrected immediately.





#### **4. Contacts**

##### **4.1 The Minister's contact is:**

[REDACTED]

Head of Testing Services ("Dienst Testen") – Ministry of Health, The Netherlands

Via e-mail: [secretariaat@lcdk.nl](mailto:secretariaat@lcdk.nl)

##### **4.2 Contractor's contact is:**

[REDACTED]

CEO

E-mail: [REDACTED]@puregeneticlifestyle.com

#### **5. Quality**

5.1 Contractor guarantees to the Minister that before utilization of a Laboratory for Diagnostic tests, this Laboratory meets the Quality Requirements for Laboratories as mentioned in Schedule 1.

5.2 During the utilization of the Laboratory the initial quality requirements as referred to in article 5.1 have to be maintained or improved. As soon Contractor foresees that the Laboratory cannot meet these minimum requirements anymore Contractor shall immediately inform the Minister. In that case the Minister is entitled to terminate the contract with immediate effect without any prior notice being required, by registered letter and without being due any compensation for lost income or other damage by the Contractor.

5.3 During utilization of the Laboratories the quality of the Laboratories will be regularly assessed and/or audited on behalf of the Minister.

5.4 If during such regular assessment or audit it appears that a Laboratory is no longer meeting the quality requirements as referred to in 5.1, the Minister is entitled to terminate the contract with immediate effect without any prior notice being required, by registered letter and without being due any compensation for lost income or other damage by the Contractor.

5.5 Contractor guarantees that the quality of Services is in accordance with prevailing laws and regulations, and practices, which would be considered as good practice of a skilled and experienced organization of a similar scale and professional standing, engaged in the provision of comparable and related services.

[REDACTED]

[REDACTED]

**6. Safety stock**

- 6.1 Contractor guarantees at the Laboratories a safety stock of reagents and disposables for the assigned Volumes of Diagnostic tests for at least 10 (ten) days based on the average Target volume.
- 6.2 Contractor guarantees at a central place a safety stock of reagents and disposables for the assigned Volumes of Diagnostic tests for at least 30 (thirty) days of the average Target capacity.
- 6.3 Contractor guarantees at the Sample hubs a safety stock of Sampling kits for the assigned Volumes for 7 (seven) days based on the average Target volume.
- 6.4 Contractor guarantees at a central place a safety stock of Sampling kits and containers for the assigned Volumes for 30 (thirty) days of the average Target volume.

**7. Throughput time, timely information**

- 7.1 Contractor guarantees a maximum throughput time of the Service of 24 (twenty-four) hours, and an average throughput time of the Service of 22 (twenty-two) hours.
- 7.2 Contractor shall timely inform Sampling hubs and the Minister about any disturbances leading to delays in publication of test results, but in any case, within 2 (two) hours of arrival of Samples in the Laboratory and shall endeavour to avoid structural complaints from Sampling hubs.
- 7.3 Contractor shall timely inform Sampling hubs about any delays in supplies or Sample collection, but in any case, at least 2 (two) hours in advance.

**8. Use of third Parties**

- 8.1 In performing the Services of the Contract, Contractor may make use of a third party or a party in which Contractor has a minority interest only if this party has accepted the same quality requirements as laid down in this Contract and Annexes in writing and after Contractor has obtained the prior Minister's consent in writing.
- 8.2 Notwithstanding the Minister's consent, Contractor remains fully responsible for discharging the obligations imposed under this Contract.





## **9. Confidentiality and Media**

- 9.1 Unless required by law or necessary in light of the objectives of this Contract, the Parties shall keep the terms and the nature of all discussions between them relating to this Contract and relating to affairs pursuant to the Contract confidential and shall not publish, disclose or provide to third parties any information from this Contract and Annexes. Parties will ensure that their respective employees, agents and sub-contractors fully comply herewith.
- 9.2 Nothing in this Agreement shall prevent the Minister from any disclosure required under the Dutch Act Dutch Act 'Wet Openbaarheid van Bestuur' (*Freedom of information act*) or to comply with the parliamentary rights on information. Such disclosure shall not constitute a default under this Contract.
- 9.3 The fact that this Agreement has been concluded as well as the essence of this Contract may be disclosed by the Minister to the Staten-Generaal (parliament).
- 9.4 The Parties shall consult each other timely in case they are approached by Media or consider to react to publications or news in the Media, or to approach Media, in relation to the subject of this Contract. In their contacts with Media, the Parties will respect each other's reasonable interests.

## **10. Data protection**

- 10.1 In so far as the Contractor, as a processor within the meaning of the General Data Protection Regulation, processes personal data for the Sampling hub(s), the Contractor guarantees the application of appropriate technical and organisational measures, so that processing meets the requirements of the General Data Protection Regulation and the protection of the data subjects is ensured.
- 10.2 Parties agree that personal data will be processed in accordance with the agreements as made between Contractor and the Sampling hub(s) in relation to the connection and use of CoronIT.

## **11. Limitation of liability**

- 11.1 The total aggregate liability of each Party under this Contract (for breach of contract, tort or otherwise) shall not exceed EUR 2.500.000 (two and a half million EUR), in no event shall any party be liable to the other party for any indirect or consequential damages (*gevolgschade*) out of or in connection with this Contract. Parties do not exclude their liability for gross negligence or wilful misconduct.





**12. Insurance**

- 12.1 The Contractor has taken out and will retain insurance cover for the total aggregate liability as mentioned in article 11.1.
- 12.2 At the Ministers request, the Contractor will immediately present either the original or certified copies of the policies and proof of the payment of premium for the insurances referred to in paragraph 1 or a statement from the insurer to the effect that these policies exist and the premium has been paid. The insurance premiums owed by the Contractor are deemed to be included in the agreed prices and fees.

**13. Cancellation and termination**

- 13.1 Without prejudice to the other provisions of this Contract, either Party may cancel the Contract in full or in part with immediate effect by registered letter, without recourse to the courts, if the other Party is in default or compliance is permanently or temporarily impossible.
- 13.2 In case Contractor is not able to meet the Target Capacity and/or the minimum agreed total score as defined in Annex C / Schedule 3 during a period of 3 (three) consecutive weeks or 3 (three) times in a total time period of 13 (thirteen) weeks, the Minister is entitled to cancel the Contract in full with immediate effect by registered letter, without recourse to the courts and without any compensation of Contractors loss of profit incurred.
- 13.3 The Minister may cancel the Contract forthwith out of court by registered mail, without being required to send any demand or notice of default, if the Contractor does not meet the Target Capacity and/or the minimum agreed total score as defined in Annex C / Schedule 3 as referred to in 13.2, if the Contractor applies for or is granted a provisional or definitive suspension of payment, files for bankruptcy, is declared bankrupt, if its business is wound up, if it ceases trading, if a substantial proportion of its assets are seized, if it undergoes a merger or a division or is dissolved which reasonably effects the compliance to the Contract, or if it should reasonably be deemed on any other grounds to be no longer capable of discharging its obligations under the Contract.

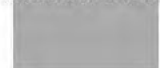


#### **14. Force Majeure**

- 14.1 In the event either Party is unable to perform its obligations under the terms of this Contract, because of causes reasonably beyond its control (including but not limited to government restrictions or lack of access to equipment, unforeseen at the moment of signing this Contract) or damage reasonably beyond its control, such Party shall not be liable against the other Party for any damages resulting from such failure to perform or otherwise from such causes.
- 14.2 The term 'Force Majeure' is in any event understood not to include: allocation of testing capacity by Contractor for the benefit of other clients, staff shortages, strikes, staff illness, shortages of materials (with exception of an acknowledged worldwide shortage), transport problems, late delivery or the unsuitability of items required for the performance of the Services, liquidity or solvency problems on the part of the Contractor or failures on the part of parties engaged by the Contractor.
- 14.3 If a Force Majeure event prevents the Contractor meeting its Target capacity as defined in Schedule 2, the Contractor will give notice thereof within 48 (forty-eight) hours of the occurrence such event, failing which it will not be entitled to rely on paragraph 1 of this Article 14. In this case Contractor will not be relieved from providing its Services in respect of the volumes it can reasonably supply despite such Force Majeure.
- 14.4 A notice of Force Majeure shall be well motivated and, in the event of foreign Government restrictions, be accompanied by an authorized statement from the relevant government evidencing such fact.

#### **15. Other Terms and Conditions**

- 15.1 This Contract is subject solely to the General Government Purchasing Conditions 2018 (ARIV 2018), in so far as the Contract does not depart from them. Any general and special terms and conditions drawn up by the Contractor do not apply. These General Terms are attached to this Contract in Annex D.
- 15.2 Parties will discuss in good faith and will mutually decide to any amendments and/or additional conditions to this Contract and/or Annexes in case unforeseen circumstances affect the performance of the agreed contractual obligations. Amendments to this Contract and/or Annexes shall not be binding unless they are agreed upon and made in writing and signed by both parties.



15.3 Contractor will provide all relevant information and after timely pre-announcement grant access to utilized locations on the Minister's reasonable request for verification purposes of (the quality of) the utilized Locations and the agreed Services.

**16. Governing law and jurisdiction**

16.1 This Contract is governed by the laws of the Netherlands.

16.2 Any dispute that arises between the parties in relation to the explanation or application of this Contract, or any agreement resulting from this Contract, shall be settled by the competent court of the Hague, the Netherlands. Before starting court litigation, Parties agree to jointly attempt to come to a solution through mediation unless one of the Parties is of the opinion that this is not effective under the circumstances. In the case of mediation, Parties will jointly appoint an MfN-registered mediator.

**17. Final provisions**

17.1 This Contract sets out the entire agreement between the Parties. Any derogations from, amendments of or additions to this Contract and/or Annexes, including changes in the scope of the Services are binding only if expressly agreed in writing by the Parties.

17.2 Any written or oral agreements previously made by the Parties about the Services that are the object of this Contract are nullified by the signature of this Contract.

Done on the date stated below and signed by Parties.

The Hague, the Netherlands,  
For the State, Minister of Health

31/12/2020

Head of Testing Services

Delfgauw, the Netherlands  
For PGL Finance BV

31/12/2020

CEO



## **Schedule 1 Services, Laboratories, Volumes and Price**

### **1. Services**

Contractor will provide the following services ("Services"):

- Set-up and distribution of an appropriate introduction of relevant persons to be contacted and an instruction letter to the Sampling hubs;
- Self-sufficient procurement of all materials needed for the execution of the Services;
- Supply of Sampling kits and containers and/or tube racks to Sampling hubs;
- Collection and transportation of Samples from Sampling hubs to Laboratories;
- Diagnostic test of Samples;
- Registration of the results of the Diagnostic test in CoronIT;
- Appropriate and traceable storage of positive tested Samples;
- Destruction of tested Samples;
- Dedicated, appropriate and where relevant pro-active Support to the Services.

For operational details of the Services see Schedule 2 'Operational details of Services'.

For key performance indicators of the Services see Schedule 3 'Key Performance Indicators'.

### **2. Sampling hubs**

Contractor will provide Sampling kits and containers to and will pick up Samples from the Sampling hubs in the Netherlands as assigned on behalf of the Minister (via "Dienst Testen").

### **3. Quality requirements laboratories**

Before utilization by the Contractor Laboratories first have to meet the following initial quality requirements:

- The Laboratory is capable in processing potential SAR-CoV-2 positive specimens at BSL-2 (ML-2) level;
- The Laboratory has at least one dedicated Medical Microbiologist medically responsible for the quality of the Diagnostic services and available for Sampling hubs for answering questions about the test results;
- The laboratory has a valid certificate for ISO15189, ISO17025 with RT-PCR in scope provided by a conform European standard accredited certification institute.





After a Laboratory has met all initial quality requirements the Laboratory has to be validated by the RIVM in the following way:

- Successful execution of a diagnostic sensitivity test of samples provided by the RIVM;
- Successful execution of a diagnostic specificity test of samples provided by the RIVM;
- Both tests are only successful if at least the core/reference Samples are diagnosed.

After the validation the Implementation phase starts in the following way:

- A between the Parties agreed implementation plan;
- A site visit;
- An audit;
- A between the Parties agreed plan how to build up the Target volume.

After the successful fulfilment of all quality requirements Contractor accepts for the purpose of monitoring the quality of the Laboratory during utilization regular proficiency tests.

#### 4. Approved Laboratories

At the moment of concluding this Contract the following Laboratories are used and approved:

Location	% of shares	Initial requirements RIVM Approval	Max test capacity per laboratory	Remarks
Novogenia, Eugendorf, Austria	15%	Yes	50.000	
Novogenia, Vlaardingen	15%	N/A	N/A	Labhub

If Contractor after the signature of this Contract wishes to use another Laboratory Contractor will see to it that before utilization the Laboratory in accordance with article 5 of this Contract meets the Quality requirements and that the Minister has given approval before utilization.

#### 5. Allowed third parties

Party	% of shares	Activities	Remarks
n/a			

If Contractor after the signature of this Contract wishes to use another third party, Contractor will inform the Minister before utilization in accordance with this Contract.

#### 6. Volumes of Services (tests per day)

Regarding the Volumes of Services four kinds of volumes are identified:



1. Target capacity      the Volume the Minister and Contractor agreed upon as reserved Volume for use by the Minister.
2. Real volume          the total actual tested Samples for a particular day
3. Guaranteed volume   the minimum guaranteed number of tested Samples as a percentage of the Target capacity.
4. Ultimate capacity    the ultimate Volume Contractor can offer to the Minister in the long run.

The Parties have agreed to build up to the Target capacity as described in table below and the Minister agrees to a Guaranteed volume (30% of Target capacity) in the following way:

Target capacity build up and Garanteed volume		
Milestones in calender weeks	Target Capacity per day	Guaranteed volume per day*
Start contract Week 1	500	N/A
Week 2	3.000	900
Week 3	10.000	3.000
Week 4	18.000	5.400
Week 5	20.000	6.000
Week 6	20.000	6.000
Week 7	20.000	6.000
Week 8	20.000	6.000
Week 9	20.000	6.000
Week 10	20.000	6.000
Week 11	20.000	6.000
Week 12	20.000	6.000
Week 13	20.000	6.000
Week 14	20.000	6.000
Week 15	20.000	6.000
Week 16	20.000	6.000
<b>Ultimate Capacity: 50.000 tests per day</b> <b>Maximum contracted volume (Target) = 20.000</b>		

)\* Measured as average per calendar week



## 7. Pricing Table

<b>Pricing table (excl. VAT) based on bandwidths of Volumes*</b>			
Till 10.000 tests per day: 65 Euro, after 10K each extra 5.000 tests price decreases till 50 Euro			
NUMBER OF REPORTED TESTS PER DAY		PRICE PER REPORTED TEST	
Minimum	Maximum		
0	9.999	€	65,00
10.000	14.999	€	62,00
15.000	19.999	€	57,50
20.000	24.999	€	53,00
>25.000	>25000	€	50,00

)\* Measured as average per calendar week

For the first 10.000 reported tests Contractor will be paid 65 euro, for the next 5.000 reported tests 62 euro, for the next 5.000 reported tests 57,50 euro, for the next 5.000 reported tests 53 euro and the number of reported tests thereafter 50 euro per reported test.

## 8. Safety stock

### *At Laboratories*

- Contractor guarantees at the Laboratories a safety stock of reagents and disposables for the assigned Volumes of Diagnostic tests for at least 10 days based on the average Target volume.
- Contractor guarantees at a central place a safety stock of reagents and disposables for the assigned Volumes of Diagnostic tests for at least 30 days of the average Target capacity.

### *At Sample hubs*

- Contractor guarantees at the Sample hubs a safety stock of Sampling kits for the assigned Volumes for 7 days based on the average Target volume.
- Contractor guarantees at a central place a safety stock of Sampling kits and containers for the assigned Volumes for 30 days of the average Target volume.

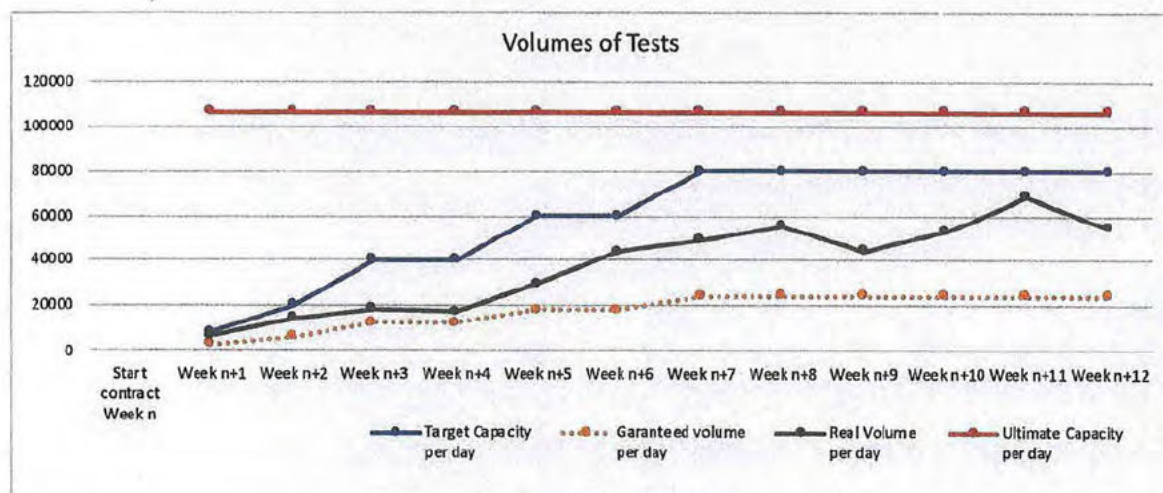


## 9. Example

This paragraph contains **an example** of how a situation in practice may work out on a specific day. **For instance** Parties agree to **106.000 test** per day as Ultimate capacity and a maximum Target capacity of 80.000 tests per day.

### EXAMPLE

Milestones	Target Capacity per day	Garanteed volume per day	Real Volume per day
Start contract Week n			
Week n+1	8.000	2.400	6.392
Week n+2	20.000	6.000	14.348
Week n+3	40.000	12.000	18.356
Week n+4	40.000	12.000	16.964
Week n+5	60.000	18.000	29.408
Week n+6	60.000	18.000	43.572
Week n+7	80.000	24.000	48.980
Week n+8	80.000	24.000	55.568
Week n+9	80.000	24.000	44.100
Week n+10	80.000	24.000	53.072
Week n+11	80.000	24.000	68.956
Week n+12	80.000	24.000	54.752
Ultimate Capacity = 106.000 per day; Maximum contracted volume (Target) = 80.000			



### EXAMPLE



## **Schedule 2 Operational agreements**

### **1. Organization**

- The Minister is overall responsible for the execution and the management of the Contract and the payment of the Contractor.
- RIVM is responsible for the validation and approval of the quality prior to the utilization of the Laboratories of Contractor.
- The Minister (via "Dienst Testen") is responsible for the assignment of Sampling hubs and Volumes to Contractor and the monitoring of the quality of Contractors Laboratories throughout utilization.
- Sampling hubs are responsible for stock keeping of the by Contractor provided Sampling Kits, sample taking and registration of the samples and citizens in CoronIT.
- Contractor is responsible for:
  - the assignment of dedicated and knowledgeable teams of medical microbiologists, logistical experts and project management for troubleshooting, (pro-active) analysis and continuous improvement of the quality of the Services and answering questions about these Services;
  - the supply of Sampling Kits, labels, tube racks and containers;
  - collection and transportation of the samples;
  - the testing of the samples and the registration of the testing results in CoronIT;
  - the traceable storage and/or the destruction of Samples;
  - monthly reports about complaints, responses and solutions to the Minister (via "Dienst Testen").

### **2. Supply of Sampling kits, containers and/or tube racks**

- Contractor provides Sampling kits with the following materials:
  - A pre-labelled collection tube with cap filled with buffer (Lyses, UTM or GLy) or an unlabelled collection tube with cap filled with buffer (Lyses, UTM or GLy) and separate labels, to be chosen by the Sampling hub;
  - The label is resistant to methyl alcohol (70%), storage at -80°C, cannot be erased by thermal heat and is provided with a unique barcode, containing information of the Contractor or Laboratory and a tube number, which can be scanned with a maximum failure rate of 0,01% or 100 ppm;





- The buffer is compatible with the Diagnostic test and not dangerous during use by the Sampling Hub staff;
- A CE-marked and patient-friendly nasopharyngeal- and throat swab;
- A seal bag with absorption filter for a safe transportation of the Sample.
- Contractor supplies beside the Sampling kits also appropriate disinfected containers and/or tube racks in an amount so that the sample taking process never must wait and, in a quality, so that collection and transportation of the Samples can be securely executed.
- Contractor supplies the Sampling kits, containers and/or tube racks in consultation with the Sampling hubs minimum once a week, during opening times and free of charge.
- Contractor is responsible for an appropriate registration of the supplies.
- Contractor provides for its risk and costs a safety stock of Sampling kits at Sampling hubs for a minimum of 7 days of the assigned Volumes.  
Contractor provides for its risk and costs a safety stock of Sampling kits at Contractor or a central location in the Netherlands for a minimum of 30 days of the assigned number of tests.

Communication	Service window	Telephone Number	Response time
Logistic issues	8:00 – 22:00; 7 days/week	085-1058499	15 minutes

### 3. Storage of Sampling kits

- Sampling hub will store the Sampling kits on its own costs at a temperature between 15 and 25°C.

### 4. Sampling

- The Sampling Hub registers the used collection tube and the information of the sampled citizen in CoronIT
- The Sampling Hub collect samples in accordance with the instructions of Contractor and RIVM ([www.lci.rivm.nl/richtlijnen/COVID-19](http://www.lci.rivm.nl/richtlijnen/COVID-19)).
- The Sampling Hub is responsible for the careful packaging of the samples in the sealing bags or tube racks and the containers.





## 5. Collection and transportation of the Samples to the Laboratories

- Contractor collects in consultation with the Sampling hubs during opening times the Samples minimum twice a day, the last moment of collection just before closure time of the Sample hub.
- Contractor keeps a registration of the collected Samples.
- Contractor consolidates and/or transports the Samples to the Laboratory in accordance to UN3373.
- Contractor chooses a collection frequency and way of consolidation and/or transportation so that the total agreed maximum throughput time will be as short as reasonably possible, but at any time within the agreed maximum throughput time.
- Contractor keeps a registration so that collected and transported Samples can be traced.

Communication	Service window	Telephone Number	Response time
Logistic issues	8:00 – 22:00; 7 days/week	085-1058499	15 minutes

## 6. Diagnostic test of Samples

- Contractor assures that the connection with CoronIT is up and running before starting the testing of the Samples.
- Contractor keeps a registration of the received Samples. Contractor will check the received tubes and will scan the tubes for registration in CoronIT.
- Missing tubes and/or missing or unreadable labels will be immediately (within 2 hours) reported to the Sampling hubs where the batch Samples came from.
- If Contractor foresees that the agreed throughput time cannot be met, Contractor will immediately inform the Sampling hub and timely (< 2 hours after reception of the Samples) inform the Sampling hub and the Minister ("Dienst Testen") about the causes, the corrective actions and when the test results than can be expected;
- Contractor tests all received Samples.
- Contractor reports the results of these tests in CoronIT in an accurate way.
- Contractor will do its utmost to keep the number of 'undetermined' test results as low as reasonable possible, but at any time < 1%.
- Contractor will do its utmost to realize the shortest possible throughput time between the moment of Sampling at the Sampling hubs and the publication of the test results of the Samples in CoronIT, but anyway within the agreed maximum throughput time.





Communication	Service window	Telephone Number	Response time
Logistic issues	8:00 – 22:00; 7 days/week	085-1058499	15 minutes
Microbiological issues	8:00 – 22:00; 7 days/week	085-1058499	15 minutes

Missing tubes and/or missing or unreadable labels reporting	a.s.a.p.
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Any foreseen delay of publication of the test results reporting	a.s.a.p.
---	----------

Contractor reports the test results of Samples in CoronIT	a.s.a.p.
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The between Parties agreed average throughput time per week is:	
For Laboratories situated in the Netherlands;	< 16 hours
For Laboratories situated outside the Netherlands.	< 22 hours

The between Parties agreed maximum throughput time per week is:	
For Laboratories situated in the Netherlands;	24 hours
For Laboratories situated outside the Netherlands.	24 hours

## 7. Storage and destruction of Samples

- Negatively and undetermined tested Samples will be appropriately destroyed by Contractor 3 (three) days after publication of the test result of the Samples in CoronIT.
- Positively tested Samples will be appropriate and traceable stored by Contractor for 2 (two) months after publication of the test result of the Samples in CoronIT.

Total days of storage of negative or undetermined Samples	3 days
Total days of storage positive Samples	2 months



**Schedule 3. Key Performance Indicators**

Key Performance Indicators	Score	Score																																																																						
<b>Reliability of average throughput time per week *</b> <table><tr><td>For Laboratories situated in the Netherlands;</td><td>&lt; 16 hours</td></tr><tr><td>For Laboratories situated outside the Netherlands.</td><td>&lt; 22 hours</td></tr></table> - 50 points for agreed throughput time - minus x points (progressive) per hour > agreed throughput time - bonus x points (progressive) per hour < agreed throughput time <table><tr><th colspan="3">AVERAGE THROUGHPUT TIME IN THE NETHERLANDS</th></tr><tr><td>Average TPT &lt;= 12,5 uur</td><td>+20</td><td>70 points</td></tr><tr><td>12,5u &lt; Average TPT &lt;= 13,5u</td><td>+10</td><td>60 points</td></tr><tr><td>13,5u &lt; Average TPT &lt;= 14,5u</td><td>+5</td><td>55 points</td></tr><tr><td>14,5u &lt; Average TPT &lt;= 15,5u</td><td>+2</td><td>52 points</td></tr><tr><td><b>15,5u &lt; Average TPT &lt;= 16,5u</b></td><td><b>0</b></td><td><b>50 points</b></td></tr><tr><td>16,5u &lt; Average TPT &lt;= 17,5u</td><td>-2</td><td>48 points</td></tr><tr><td>17,5u &lt; Average TPT &lt;= 18,5u</td><td>-5</td><td>45 points</td></tr><tr><td>18,5u &lt; Average TPT &lt;= 19,5u</td><td>-10</td><td>40 points</td></tr><tr><td>20,5u &lt; Average TPT &lt;= 21,5u</td><td>-15</td><td>35 points</td></tr><tr><td>21,5u &lt; Average TPT &lt;= 22,5u</td><td>-20</td><td>30 points</td></tr><tr><td>22,5u &lt; Average TPT &lt;= 23,5u</td><td>-30</td><td>20 points</td></tr><tr><td>Average TPT &gt; 23,5u</td><td>-40</td><td>10 points</td></tr></table> <table><tr><th colspan="3">AVERAGE THROUGHPUT TIME OUTSIDE THE NETHERLANDS</th></tr><tr><td>Average TPT &lt;= 18,5 uur</td><td>+20</td><td>70 points</td></tr><tr><td>18,5u &lt; Average TPT &lt;= 19,5u</td><td>+10</td><td>60 points</td></tr><tr><td>19,5u &lt; Average TPT &lt;= 20,5u</td><td>+5</td><td>55 points</td></tr><tr><td>20,5u &lt; Average TPT &lt;= 21,5u</td><td>+2</td><td>52 points</td></tr><tr><td><b>21,5u &lt; Average TPT &lt;= 22,5u</b></td><td><b>0</b></td><td><b>50 points</b></td></tr><tr><td>22,5u &lt; Average TPT &lt;= 23,5u</td><td>-10</td><td>40 points</td></tr><tr><td>23,5u &lt; Average TPT &lt;= 24,5u</td><td>-25</td><td>25 points</td></tr><tr><td>Average TPT &gt; 24,5u</td><td>-40</td><td>10 points</td></tr></table>	For Laboratories situated in the Netherlands;	< 16 hours	For Laboratories situated outside the Netherlands.	< 22 hours	AVERAGE THROUGHPUT TIME IN THE NETHERLANDS			Average TPT <= 12,5 uur	+20	70 points	12,5u < Average TPT <= 13,5u	+10	60 points	13,5u < Average TPT <= 14,5u	+5	55 points	14,5u < Average TPT <= 15,5u	+2	52 points	<b>15,5u &lt; Average TPT &lt;= 16,5u</b>	<b>0</b>	<b>50 points</b>	16,5u < Average TPT <= 17,5u	-2	48 points	17,5u < Average TPT <= 18,5u	-5	45 points	18,5u < Average TPT <= 19,5u	-10	40 points	20,5u < Average TPT <= 21,5u	-15	35 points	21,5u < Average TPT <= 22,5u	-20	30 points	22,5u < Average TPT <= 23,5u	-30	20 points	Average TPT > 23,5u	-40	10 points	AVERAGE THROUGHPUT TIME OUTSIDE THE NETHERLANDS			Average TPT <= 18,5 uur	+20	70 points	18,5u < Average TPT <= 19,5u	+10	60 points	19,5u < Average TPT <= 20,5u	+5	55 points	20,5u < Average TPT <= 21,5u	+2	52 points	<b>21,5u &lt; Average TPT &lt;= 22,5u</b>	<b>0</b>	<b>50 points</b>	22,5u < Average TPT <= 23,5u	-10	40 points	23,5u < Average TPT <= 24,5u	-25	25 points	Average TPT > 24,5u	-40	10 points	<b>10 - 70</b>	
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<b>Reliability of maximum throughput time per week*</b> <table><tr><td>For Laboratories situated in the Netherlands;</td><td>24 hours</td></tr><tr><td>For Laboratories situated outside the Netherlands.</td><td>24 hours</td></tr></table> - bonus 15 points only if all weekly tested Samples are reported within the maximum throughput time (Yes = 15 points/No = 0 points)	For Laboratories situated in the Netherlands;	24 hours	For Laboratories situated outside the Netherlands.	24 hours	<b>0 or 15</b>																																																																			
For Laboratories situated in the Netherlands;	24 hours																																																																							
For Laboratories situated outside the Netherlands.	24 hours																																																																							
<b>Timely information (&lt; 2 hours after arrival of Samples in Lab) of Sampling hubs/LCDK about disturbances leading to delays in publication of test results</b> - bonus 5 points if no structural complaints** from Sampling hubs	<b>0 or 5</b>																																																																							

<b>Timely information (&gt; 2 hours in advance) of Sampling hubs about delays in supplies or Sample collection</b> - bonus 5 points if no structural complaints** from Sampling hubs	<b>0 or 5</b>	
<b>No non-performance caused by shortage in agreed safety stocks</b> - bonus 5 points if no disturbance of sample taking/testing process	<b>0 or 5</b>	
<b>Total points</b>	<b>100</b>	

<b>The minimum total score per week is:</b>	<b>70</b>
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\* based on information derived from CoronIT)

\*\* Structural complaints mean more non-conformances from two or more Sampling hubs reported by e-mail to Contractor [complaints@contractor.com](mailto:complaints@contractor.com) with a copy to [contractmanagement@lcdk.nl](mailto:contractmanagement@lcdk.nl) and accepted by Contractor.

Dienst Testen will weekly set up and share with Contractor the score on KPI's. The score on KPI's, Strategic and operational issues will be discussed in meetings every week.



**Annex D**

**General Government Purchasing Conditions 2018 (ARIV 2018)**





**ANNEX E**

**Financial Brochure e-invoicing government (Financiele Bijsluiter)**



Sum of AantalUitslagen	Column Labels					
	9					10
Row Labels	202135	202136	202137	202138	202139	202139
GGD Amsterdam	1691	2437	1905	1607	725	477
GGD Gooi en Vechtstreek	760	1074	1084	896	546	348
GGD Kennemerland	2675	4340	3688	2696	1317	892
GGD Regio Utrecht	3635	6201	6381	5848	3243	2532
GGD Rotterdam-Rijnmond	530	754	831	794	628	481
<b>Grand Total</b>	<b>9291</b>	<b>14806</b>	<b>13889</b>	<b>11841</b>	<b>6459</b>	<b>4730</b>

10	Grand Total			
202140	202141	202142	202143	
1421	1643	1989	2762	16657
911	1110	770	1269	8768
2773	3455	3898	5185	30919
7714	9190	9698	13600	68042
1889	2711	2665	4838	16121
<b>14708</b>	<b>18109</b>	<b>19020</b>	<b>27654</b>	<b>140507</b>



Inspectie Gezondheidszorg en Jeugd  
Ministerie van Volksgezondheid,  
Welzijn en Sport

Stadsplateau 1  
3521 AZ Utrecht  
Postbus 2518  
6401 DA Heerlen  
T 088 120 5000  
www.igj.nl

**Inlichtingen bij**

5.1.2.e  
5.1.2.e @igj.nl  
T 088-1205000

# verslag

**Datum**

10 november 2021

Omschrijving	Bezoekverslag Pure Medical B.V. rond SARS-CoV-2-diagnostiek
Vergaderdatum en -tijd	14 juli 2021, 14:30-16:00
Vergaderplaats	Olivier van Noortlaan 120 in Vlaardingen
Aanwezig	5.1.2.e 5.1.2.e , 5.1.2.e 5.1.2.e , 5.1.2.e 5.1.2.e , 5.1.2.e
Afwezig	
Kopie aan	

Geachte heer 5.1.2.e ,

Op 14 juli jl. bracht de Inspectie Gezondheidszorg en Jeugd (IGJ) een bezoek aan Pure Medical B.V. (hierna; PM) op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Reden voor het bezoek was een melding over PM die bij de IGJ was binnengekomen. Deze melding staat bij de IGJ geregistreerd onder nummer 5.1.2.e . De melding betrof een aantal zaken die betrekking hebben op arbeidsomstandigheden en een aantal zaken rond de kwaliteit van de werkzaamheden die gedaan worden in het kader van SARS-CoV-2-diagnostiek. Een van de toezichttaken van de IGJ is het toezicht op de kwaliteit van de laboratoriumdiagnostiek in het algemeen en tijdens de huidige coronacrisis het toezicht op de kwaliteit van de uitvoering van de SARS-CoV-2 diagnostiek bij die laboratoria die daarvoor door de overheid zijn aangewezen. Uw organisatie is daar een van.

Dit was de hoofdreden voor de IGJ om naar aanleiding van de melding een inspectiebezoek af te leggen. Over de aspecten in de melding van vermeende tekortkomingen rond arbeidsomstandigheden heeft de IGJ overlegd met de Inspectie Sociale Zaken en Werkgelegenheid (ISZW).

## Bevindingen

Tijdens het bezoek op heeft de Inspectie een inleidend gesprek gehad met de heer 5.1.2.e 5.1.2.e en de heer 5.1.2.e (5.1.2.e). Vervolgens was er een rondleiding op het laboratorium en heeft er een afsluitend gesprek plaatsgevonden.

De Inspectie heeft onderzocht of de uitvoering van de SARS-CoV-2 diagnostiek volgens de geldende wet- en regelgeving en terzake doende richtlijnen verloopt. In dit gespreksverslag proberen wij onze bevindingen van het bezoek en het gesprek zo volledig mogelijk weergegeven.

De Inspectie heeft tijdens het bezoek van 14 juli 2021 en uit de aanvullende informatie toegezonden op 18-8-2021, het onderstaande waargenomen/vernomen.

- De heer 5.1.2.e begint het gesprek met zijn visie over de aanleiding van het inspectiebezoek, dat deze melding afkomstig is van mevrouw 5.1.2.e, een 5.1.2.e van PM.

### Samenwerkingspartners en locaties van laboratorium werkzaamheden

- De activiteiten bij PM worden uitgevoerd in een gebouw aan de Olivier van Noortlaan 120 in Vlaardingen. In dit gebouw zijn meerdere laboratoria gevestigd. PM huurt hier laboratoriumruimte. PM is onderdeel van PGL Finance B.V., gevestigd in Eersel, Nederland.
- De heer 5.1.2.e gaf tijdens het gesprek aan dat PM een contract voor het uitvoeren van SARS-CoV-2 diagnostiek heeft met Dienst Testen.
- De heer 5.1.2.e gaf tijdens het gesprek aan dat PM sinds 2-1-2021 SARS-CoV-2 diagnostiek op nasofaryngeale swabafnames verzorgt. Samples zijn afkomstig van verschillende GGD'en en dit is contractueel vastgelegd.
- De handelingen uitgevoerd voor de door PM geleverde dienst zijn in 2 delen uiteen te zetten namelijk: (1) Monstervoorbereiding aan de Olivier van Noortlaan 120 in Vlaardingen; het uitvullen van buizen met lysisbuffer voor GGD's, het ontvangen van buizen afkomstig van GGD's en overpipetteren van sample in een 96 wells systeem. (2) Analyse; De isolatie, nucleïnezuuramplificatie en detectie worden bij Novogenia in Oostenrijk, een ISO 15189 geaccrediteerd lab, uitgevoerd.

### Competenties

- PM had ten tijde van het bezoek ongeveer 15 werknemers in dienst. De heer 5.1.2.e gaf tijdens het gesprek aan dat alle medewerkers een laboratorium-achtergrond hebben. Pure Medical verzorgt zelf de werving van de medewerkers en additionele scholing van medewerkers. PM heeft geen documentatie/een protocol laten zien waaruit blijkt dat dit intern geborgd is. (Interne opleidingseisen, kwaliteitssysteem t.a.v. bevoegdheid en bekwaamheid van het personeel). De heer 5.1.2.e 5.1.2.e geeft aan dat deze zaken zijn opgenomen in het kwaliteitsmanagementsysteem (KMS).
- In de door PM aangeboden dienst ligt de vakinhoudelijke verantwoordelijkheid voor moleculaire diagnostiek bij Novogenia. Een moleculair medisch microbioloog (MMM) verbonden aan Novogenia in Oostenrijk is verantwoordelijk voor de uitslagen die door Novogenia worden geproduceerd. Terugkoppeling van de resultaten naar de persoon die getest is, en daarbij de medische verantwoordelijkheid, ligt bij de arts van de GGD.
- Novogenia is een RIVM erkend opschalings lab voor moleculaire SARS-CoV-2-diagnostiek. D.w.z. Novogenia heeft een contract met VWS voor SARS-



CoV-2 diagnostiek en heeft een certificaat van het RIVM als een van de aangesloten laboratoria voor deze diagnostiek.

- De heer 5.1.2.e gaf tijdens het bezoek aan dat een maximale capaciteit van 20.000 monsters per dag mogelijk is, maar gemiddeld werden er 7000 monsters per dag verwerkt. Pure Medical wordt 2 weken van te voren geïnformeerd door GGD over de te verwachten aantallen monsters. Dat maakte tijdige op- of afschaling mogelijk.
- PM is, als contractant van Dienst Testen, eindverantwoordelijke voor de geleverde kwaliteit van zorg van de gehele aangeboden dienst.

#### Handelingen

- In Vlaardingen worden door PM eenvoudige laboratoriumhandelingen uitgevoerd. Het lab beperkt zich tot handelingen voor monstervoorbereiding en verzending. Gezien er geen daadwerkelijke isolatie, nucleïnezuur amplificatie en detectie plaats vindt in dit laboratorium, is deze apparatuur dan ook niet aanwezig.
- Op deze locatie worden buizen gevuld met een lysisbuffer. Deze lysisbuffer bevat o.a. Guanidine thiocynaat. De gevulde buizen gaan naar de testlocaties van de GGD'en.
- De buizen inclusief de monsters werden van de GGD'en vervoerd naar Pure Medical met een gecertificeerde koerier als 'category B infectious substance UN 3373'.
- Na ontvangst worden de buizen gescand (2D matrix code op de bodem (Micronic)) en monsters worden over gepipetteerd naar een 96-wells system/rack .
- Deze potentieel aerosolvormende handelingen gebeuren in een zuurkast. Dit zijn het uitvullen van lysisbuffer en het overpipetteren van lysisbuffer met swab samples afkomstig van GGD.
- Deze werkwijze, waarbij de lysisbuffer al in de buis zit als de monsterstok erin wordt geplaatst, borgt mogelijke contaminatie. D.w.z. alle virussen zijn afgedood op het moment dat de buizen bij het laboratorium arriveren.
- Uitgevuld en afgesloten samples worden per vliegtuig naar Novogenia in Oostenrijk verzonden.
- Resultaten worden binnen 24 uur teruggekoppeld aan GGD via CoronaIT.

#### Prestaties en verificatie

- De gebruikte PCR-test voor de analyse door Novogenia is de Phoenix DX SARS-COV-2 een CE gemarkeerd IVD van fabrikant Procomcure Biotech GmbH.
- Documentatie van de "In huis" validatie van de gebruikte SARS-CoV-2 test bij Novogenia is aanwezig (PDF en PowerPoint). D.w.z. validatie en periodiek borging van de kwaliteit van de moleculaire diagnostiek is beschreven (zowel interne als externe controles (ringstudies) meegenomen in de validatie
- Iedere 20ste positieve sample werd 4 dagen bewaard bij Pure Medical en ging ook naar het RIVM voor de kiemsurveillance. Monsters van specifieke patiënten voor een Whole Genome Sequencing worden vanuit Oostenrijk verzonden naar het RIVM.

### Kwaliteitsmanagementsysteem

- De heer 5.1.2.e geeft aan dat er voor het laboratorium geen accreditatie ten behoeve van een kwaliteit management systeem op grond van ISO 9001 of ISO 15189 aanwezig is, maar dat er wel gewerkt wordt volgens de vigerende standaarden voor moleculair diagnostische laboratoria. PM houdt daarbij de ISO-norm 15189:2015 aan als leidraad voor het functioneren en handelen. Verder geeft de heer 5.1.2.e aan dat i.s.m. een extern bureau (Cartese) het ISO 15189 accreditatie proces is ingezet. De aanvraag is volgens de heer 5.1.2.e ingediend bij RvA.
- De heer 5.1.2.e geeft aan dat PM beschikt over Cloud gebaseerd KMS systeem (Zenya) voor beheer van o.a. het kwaliteitshandboek en procedures.
- Een risico-inventarisatie en –evaluatie (RI&E) van de werkzaamheden is niet aanwezig. Er zal in het kader van de aanvraag accreditatie ISO 15189 een RI&E worden gedaan. Ten tijde van het bezoek was deze nog niet aanwezig. De samples die gemeten worden in Oostenrijk vallen onder de RI&E van Novogenia.
- Bij de aangeleverde stukken zat een document met een algemene opzet voor een interne audit procedure en een PM specifiek Excel schema voor periodiek audits. De Excel was niet volledig ingevuld.
- Privacy; PM maakt gebruik van een barcode gecodeerd systeem (Micronic) voor digitale identificatie van de samplebuis. Deze wordt gekoppeld aan de GGD barcode/informatie. Uitslagen afkomstig van Novogenia worden via een beveiligde verbinding teruggestuurd naar PM en gekoppeld aan CoronIT.
- Positieven werden middels de uitslagen doorgegeven aan de GGD, maar werden ook nog separaat aan de GGD doorgegeven.
- Bij de op 18-8-2021 aangeleverde aanvullende documentatie zat een wetenschappelijk artikel over inactivatie van het virus door Guanidine thiocynaat. PM heeft geen documentatie/een gevalideerd protocol laten zien waaruit blijkt dat dit intern geborgd is.
- Een gedocumenteerd schoonmaak protocol voor het PM lab is aanwezig.

### Laboratorium inrichting

- Het lab maakt een schone, goed georganiseerde en rustige indruk.
- De gebruikte vloeistoffen, 70% alcohol en Guanidine thiocynaat lysis buffer stonden beide in plofkast met afzuiging en waren correct en volledig gelabeld.
- Voor aerosol vormende handelingen maakt PM gebruik van zuurkasten.
- Afvalstroom; Het afval van het gehele proces gaat in WIVA vaten; er wordt geen onderscheid gemaakt tussen potentieel besmettelijk en schoon afval.
- PM geeft aan dat kwaliteitscontrole op temperatuur gevoelige reagentia geschied d.m.v. data loggers op koel- en vrieskasten.
- De inspectie heeft een opmerking gemaakt over de uitvoering van handelingen in zuurkast, de laborant droeg geen veiligheidsbril bij pipetteerhandelingen en het veiligheidsglas stond niet naar beneden.
- Er werd aangegeven dat schoonmaken met 70% alcohol gebeurt. Dit is volgens de inspectie niet correct. Hier is een opmerking over gemaakt.
- Oogdouche was niet aanwezig. Hier is een opmerking over gemaakt.
- Ongebruikte teruggekomen buizen die gelekt hebben werden ook bewaard in een zak in de plofkast voor mogelijk hergebruik, niet wenselijk i.v.m. contaminatie risico. Hier is een opmerking over gemaakt.

Op 18-8-2021 heeft PM aan de Inspectie schriftelijk laten weten n.a.v. bovenstaande opmerkingen inmiddels enkele aanpassingen te hebben doorgevoerd.

De hierboven beschreven bevindingen zijn opgemaakt uit het inspectiebezoek van 14 juli 2021 en uit de aanvullende informatie toegezonden op 18-8-2021. De inspectie stelt u in de gelegenheid te reageren op feitelijke onjuistheden in dit gesprekverslag en ontvangt uw reactie hierop graag uiterlijk **18 november 2021**.

De inspectie vraagt u om uw reactie op bovenstaande vragen uiterlijk te sturen naar meldpunt@igj.nl en 5.1.2.e@igj.nl onder vermelding van ons referentienummer 5.1.2.e . Wanneer de inspectie binnen de gestelde termijn geen reactie van u heeft ontvangen, stelt de inspectie het definitieve gesprekverslag vast.

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @puregeneticlifestyle.com; 5.1.2.e @puregeneticlifestyle.com; 5.1.2.e @gmail.com  
**Onderwerp:** Ons kenmerk: 5.1.2.e inspectiebezoek Pure Medical (PGL Finance B.V.) op 14 juli 2021  
**Datum:** woensdag 10 november 2021 16:32:00  
**Bijlagen:** [image002.jpg](#)  
[20211108\\_Pure Medical bezoekverslag 14 juli.pdf](#)

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Geachte heer 5.1.2.e ,

Op 14 juli jl. bracht de Inspectie Gezondheidszorg en Jeugd (IGJ) een inspectiebezoek aan Pure Medical B.V. op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Zoals ik al aangaf in de e-mail eerder verzonden vandaag, was er 4 november jl. een herbezoek van de Inspectie op dezelfde locatie met dezelfde strekking.

Wij zullen beide bezoeken (van 14 juli & 4 november) combineren in 1 inspectierapport. Om deze reden heb ik het concept inspectierapport van 14 juli omgezet in een gesprekverslag.

Hierbij ontvangt u het gesprekverslag. De inspectie stelt u in de gelegenheid te reageren op feitelijke onjuistheden in dit gesprekverslag en ontvangt uw reactie hierop graag uiterlijk 18 november 2021.

Nogmaals excuus voor de vertraging. Als u nog vragen hebt hoor ik dat graag.

Met vriendelijke groeten,

5.1.2.e  
5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
 Stadsplateau 1 3521 AZ Utrecht  
 Postbus 2518 | 6401DA | Heerlen | Nederland

.....  
 T +31 (0)88 1205000  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
 Twitter: @IGJnl LinkedIn IGJ

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
 .....

# Dubbel met doc 16

**Van:** 5.1.2.e [redacted]@gmail.com  
**Aan:** 5.1.2.e [redacted]  
**Cc:** 5.1.2.e [redacted] 5.1.2.e@puregeneticlifestyle.com  
**Onderwerp:** antwoord aan de IGJ 17-11-21.docx  
**Datum:** donderdag 18 november 2021 14:31:42  
**Bijlagen:** [antwoord aan de IGJ 17-11-21.docx](#)  
[PureMedical PCR analyse overzicht.pdf](#)  
5.1.2.e [redacted] [Accreditatieaanvraag Geaccepteerd](#) 5.1.2.e [redacted]  
5.1.2.e [redacted] [- Pure Medical.pdf](#)  
5.1.2.e [redacted] [Accreditatieaanvraag Geaccepteerd](#) 5.1.2.e [redacted]  
[Validation Report - Workflow 3- KingFisher - Thermo Fisher TaqPath Covid-19 CF-IVD RT-PCR Kit.docx](#)

---

Geachte Heer 5.1.2.e [redacted],

Allereerst mijn welgemeende excuses dat we ietsje te laat zijn met het toesturen van de gevraagde documenten. Zoals u wellicht bekend hebben we te maken met een grote hoeveelheid aanvragen.

In de bijlage treft u aan de antwoorden en de gevraagde documenten.

We hebben u gisteren toegang verleend tot ons kwaliteitssysteem zoals afgesproken .

Mochten er vragen zijn dan hoor ik dat graag van u.

Met vriendelijke groet,

5.1.2.e [redacted]

5.1.2.e [redacted]

Pure Medical



1. → De heer 5.1.2.e geeft aan de exacte cijfers aan de inspectie te zullen versturen (gespecificeerd per week). Ziebijlage.
2. → Hij geeft aan dat hij bij Dienst Testen gaat informeren of hij het contract en/of deze details met de inspectie mag delen. Hij zal de inspectie hierover informeren.  
*We vinden het achteraf gezien hoogst ongebruikelijk om contracten te delen met derden. Kunt u ons aangeven waarom dit van belang is voor de geleverde kwaliteit buiten dat u volledige inzage heeft in ons kwaliteitssysteem ?*
3. → PM zal de voor- en achternaam van de verantwoordelijk arts microbioloog aan de inspectie doorgeven inclusief zijn contactgegevens en BIG-nummer.  
*Onze Arts Microbioloog is Dr 5.1.2.e , BIG nummer 5.1.2.e .*
4. → PM zal de inspectie een verificatie rapport toesturen en een tabel met alle gebruikte apparatuur en reagentia.
  - *Het verificatie rapport van de workflow Bioecho / Taqpath is bijgevoegd. (Bijlage)*
5. → PM zal de verklaring van volledigheid van de RvA naar de inspectie toe sturen.
  - *De verklaring van volledigheid van De RvA is bijgevoegd. (Bijlage)*
6. De Inspectie wordt toegezegd toegang te krijgen tot dit KMS systeem.  
*Ons kwaliteitssysteem heet Zenya van de firma Infoland. U heeft hiervoor een uitnodiging ontvangen om een wachtwoord in te vullen. Het werkt als volgt.*
  - *Uw logt in met uw wachtwoord.*
  - *Gaat naar de functie Raadplegen*
  - *Daarin vindt u alle documenten in volgorde van de ISO 15189 norm U wellicht bekend.*
  - *Mocht het niet lukken. U kunt mij bellen op 06 – 5.1.2.e .*

5.1.2.e

17-11-21



Week	Totaal intern	Totaal samples	Percentage
41	5.1.2.c	5.1.2.c	5.1.2.c
42			
43			
44			
45			
46			
Totaal			



Pure Medical B.V.

5.1.2.e

Bieslandseweg 2  
2645 BM DELFGAUW

Ons kenmerk: RvA 5.1.2.e

Onderwerp: Accreditatieaanvraag geaccepteerd

Projectcode: 5.1.2.e

Utrecht, 1 september 2021

Geachte heer 5.1.2.e

Op 19 juni 2021 heeft u een accreditatieaanvraag bij ons ingediend. Hierbij wil ik u laten weten dat deze aanvraag na ontvangst van de ontbrekende documenten op 23 augustus 2021 is geaccepteerd en in behandeling wordt genomen.

#### Registratienummer

5.1.2.e

Uw RvA-registratienummer 5.1.2.e Voor een goede afhandeling van alle correspondentie is het van belang dat u dit nummer in brieven en e-mails aan de RvA opneemt.

#### Contactpersoon

Heeft u vragen? Dan kunt u contact opnemen met 5.1.2.e

Accreditatiebeoordelingen bij de RvA. Haar contactgegevens zijn:

Mevr. 5.1.2.e

E-mail 5.1.2.e@rva.nl

Telefoon: +31 (0)30 2394500

#### Achtergrondinformatie

Via onze website ([www.rva.nl](http://www.rva.nl)) kunt u alle documenten van de RvA inzien. Wij raden u aan om in ieder geval de documenten te bekijken die door de internationale organisaties voor accreditatie (EA, IAF en ILAC) zijn gepubliceerd. Op onze website vindt u ook de links naar de sites van deze organisaties. Verder adviseren wij u om onze beleidsregel BR002 te lezen, omdat daarin alle te doorlopen stappen staan beschreven.

### Vervolg traject

De eerstvolgende stap is het vooronderzoek. Uw contactperson zal zo spoedig mogelijk contact met u opnemen om dit onderzoek in te plannen. Verder ontvangt u op korte termijn een voorschotnota. De betalingstermijn hiervoor is dertig dagen. Wanneer u deze nota eerder betaalt, kan dat het proces versnellen.

Mocht u hierover nog vragen hebben, dan kunt u contact opnemen met uw contactpersoon.

Ik hoop u hiermee voldoende te hebben geïnformeerd.

Met vriendelijke groet,

## 5.1.2.e

*Brieven van de RvA worden elektronisch gegenereerd en verzonden, en daarom niet ondertekend.*



**RAAD VOOR ACCREDITATIE**

**AANVRAAG ACCREDITATIE**

**RvA-F001-a-NL**



ONDERGETEKENDE : Dhr. 5.1.2.e ☐

NAAM ORGANISATIE : Pure Medical BV

ADRES : Bieslandseweg 2

PLAATS : 2645 BM Delfgauw

hierna te noemen "de Instelling", waarvoor details zijn gegeven in deel 1 van dit formulier,

in aanmerking nemende dat de Raad voor Accreditatie optreedt als de nationale Accreditatieinstantie in Nederland:

1. Verzoekt de Raad voor Accreditatie ten behoeve van de Instelling het Accreditatieproces te starten voor de activiteiten genoemd in deel 2 van dit formulier.
2. Verklaart bekend te zijn met de regels vastgelegd in RvA-BR002 Beleidsregel Accreditatie en met de in deze beleidsregel genoemde overige van toepassing zijnde RvA-beleidsregels en voorschriften, en deze regels en voorschriften in acht te nemen tijdens het accreditatieproces en na het verkrijgen van accreditatie.
3. Verklaart tijdens de accreditatieprocedure op geen enkele wijze de suggestie te wekken dat de met dit formulier aangevraagde accreditatie reeds is verleend.
4. Verklaart alle gegevens in het kader van de accreditatieaanvraag en de accreditatiebeoordelingen vertrouwelijk aan de RvA te verstrekken en bekend te zijn met de beperkingen die de 'Wet Openbaarheid van Bestuur' stelt aan de vertrouwelijkheid van documenten.
5. Verklaart, door het invullen en ondertekenen van dit aanvraagformulier, akkoord te gaan met de doelstellingen en werkwijzen van de Raad voor Accreditatie, en bevoegd te zijn de Instelling te vertegenwoordigen en de verplichtingen als gevolg van deze aanvraag aan te gaan.

Datum: 19 j

Handtekening

5.1.2.e

## DEEL 1: INFORMATIE OVER DE INSTELLING

### 1.1 Administratieve gegevens

Naam organisatie <sup>1)</sup>	:	Pure Medical
Divisie / Afdeling	:	
Handelsnaam	:	
Naam moederorganisatie (indien van toepassing)	:	PGL Finance
Rechtsvorm	:	BV
Registratienummer KvK	:	27352865
Postadres hoofdkantoor	:	Bieslandseweg 2
Postcode	:	2645 BM
Plaats	:	Delfgauw
Land	:	Nederland
Bezoekadres hoofdkantoor <sup>2)</sup>	:	Olivier van Noortlaan 120
Postcode	:	
Plaats en land	:	Vlaardingen, Nederland
Telefoon (algemeen)	:	+44 7342036192
Fax	:	-
URL website	:	www.puremedical.world
E-mail (algemeen)	:	info@puremedical.world
Naam contactpersoon	:	5.1.2.e
Telefoon contactpersoon	:	5.1.2.e
E-mail contactpersoon	:	5.1.2.e@puremedical.world
Registratienummers van andere RvA-accreditaties (indien van toepassing)	:	

1) Toon de structuur in een organisatieschema (bijlage bij dit formulier).  
2) Informatie over vestigingen wordt vermeld in tabellen 1.4.1 en 1.4.2.

5.1.2.e

## 1.2 Sleutelfunctionarissen

Bedoeld worden de personen in een managementpositie en personen met een specifieke of unieke deskundigheid die essentieel is voor de te accrediteren activiteiten.

Naam (inclusief voorletters en titel)	Functie
5.1.2.e	5.1.2.e

## 1.3 Aantal personeelsleden betrokken bij de te accrediteren activiteiten

5.1.2.e

## 1.4 Locaties

### 1.4.1 Locaties met kernactiviteiten (Zie RvA-BR003 voor de definitie van kernactiviteiten)

Naam en volledig adres (straat, plaatsnaam en eventueel land) van de locatie In het geval van vestigingen buiten Nederland is de Cross Frontier Policy van toepassing (zie RvA-BR007)	<p>a. Specificeer de activiteiten op de locatie.</p> <p>b. Welke delen van de hoofdgebieden van de aangevraagde scope (zie aanvullend aanvraagformulier) betreft dit?</p> <p>c. Aantal personen dat betrokken is bij de activiteiten?</p> <p>d. Wordt "remote personnel" dat kernactiviteiten uitvoert gemanaged vanuit deze locatie? Indien ja, vermeld aantal en activiteiten.</p> <p>e. Kan deze locatie op afstand vanuit het hoofdkantoor door de RvA worden beoordeeld?</p>
1. Hoofdkantoor	<p>a. –formuleren en vaststellen van beleid; - ontwikkeling van testmethoden, processen en procedures; - uitvoeren van testen - training en kwalificatie van technisch personeel - beoordeling van opdrachten en contracten - beoordeling en goedkeuring van resultaten en rapporten</p> <p>b. Microbiologie (Moleculaire Diagnostiek)</p> <p>c. nee</p> <p>d. n.v.t.</p>
2.	<p>a.</p> <p>b.</p>



- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
3. a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

Voeg indien noodzakelijk nieuwe rijen toe

#### 1.4.2 Locaties met andere (niet kern)activiteiten

**Naam en volledig adres  
(straat, plaatsnaam en  
eventueel land) van de locatie**

In het geval van vestigingen buiten  
Nederland is de *Cross Frontier Policy* van  
toepassing (zie RvA-BR007)

- a. Specificeer de activiteiten op de locatie.
- b. Welke delen van de hoofdgebieden van de aangevraagde scope (zie aanvullend aanvraagformulier) betreft dit?
- c. Aantal personen dat betrokken is bij de activiteiten?
- d. Kan deze locatie op afstand vanuit het hoofdkantoor door de RvA worden beoordeeld?

1. a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
2. a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
3. a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

Voeg indien noodzakelijk nieuwe rijen toe

#### 1.4.3 Virtuele locatie (Zie RvA-BR003 voor de definitie van virtuele locatie)

**Onderdeel van de scope  
(hoofdgebied)**

**Activiteiten vanuit de virtuele locatie en aantal  
personen betrokken bij de activiteiten**

5.1.2.e

Voeg indien noodzakelijk nieuwe rijen toe

### 1.5 Gerelateerde organisaties

Naam en vestigingsplaats	Aard van de relatie en activiteiten van deze organisatie
PGL Finance, Delfgauw	Werkmaatschappij voor uitvoeren genetische en microbiologische testen

Gerelateerde organisaties zijn organisaties die een relatie met uw organisatie hebben door gedeeld eigenaarschap, gedeelde naam, samenwerkingsovereenkomsten of gedeeld management. Ook een eventuele moederorganisatie en onderdelen in een holding waarvan uw organisatie deel uitmaakt zijn gerelateerde organisaties.

### 1.6 Uitbesteding

Activiteiten die in kader van de geaccrediteerde scope worden uitbesteed	Naam en vestigingsplaats uitvoerende organisatie (indien van toepassing accreditatienummer vermelden)
Uitvoeren testen (Mol. Diagnostiek)	Novogenia, Oostenrijk

### 1.7 Werkterrein: Omvang activiteiten

# 5.1.2.e

### 1.8 Activiteiten in landen zonder vestiging

Land In het geval van activiteiten buiten Nederland is de Cross-Frontier Policy van toepassing (zie RvA-BR007)	a. Welke activiteiten worden in dit land uitgevoerd onder de RvA-accreditatie? b. Welke onderdelen van de aangevraagde scope (zie aanvullend aanvraagformulier) betreffen deze activiteiten? c. Specificeer het aantal personen dat deze activiteiten uitvoert. d. Vanuit welke locatie genoemd in tabel 1.4.1 of 1.4.2 worden deze activiteiten gemanaged?
---	--

1. a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_

2. a. \_\_\_\_\_

b.

c.

d.

3.

a.

b.

c.

d.

### 1.9 Overige informatie

Door de Overheid aangemeld voor het uitvoeren van conformiteitsbeoordelingen in het kader van Europese regelgeving? (specificeer activiteit en aanmeldende autoriteit):nvt

Door de Overheid aangewezen voor het uitvoeren van conformiteitsbeoordelingen in het kader van nationale regelgeving? (specificeer activiteit en aanwijzende autoriteit):nvt

Overige erkenningen door de overheid in het kader van nationale of Europese regelgeving:nvt

Uitvoering van conformiteitsbeoordelingen die bij wet onder accreditatie moeten worden uitgevoerd? (specificeer activiteit en ministerie):nvt

Erkenningen van andere aard (specificeer activiteit en erkennende instantie):nvt

Geaccrediteerd door een andere accreditatieinstelling (specificeer AB en scope):nvt

Is accreditatie van de instelling ooit ingetrokken of geweigerd? (indien ja, specificeer):nee

Welke activiteiten voert de instelling uit naast de geaccrediteerde activiteiten? geen

5.1.2.e



## DEEL 2: TE ACCREDITEREN ACTIVITEITEN.

Details dienen te worden gespecificeerd op het aanvullend aanvraagformulier dat in de onderstaande tabel per soort accreditatie is gespecificeerd. Deze aanvullende aanvraagformulieren zijn via onze website te verkrijgen.

Conformiteitsbeoordelende activiteit	Accreditatienorm <sup>1)</sup>	Aanvullend aanvraagformulier
<input type="checkbox"/> Kalibratie	EN ISO/IEC 17025	RvA-F003
<input type="checkbox"/> Testing	EN ISO/IEC 17025	RvA-F004-1
<input checked="" type="checkbox"/> Medische testen	EN ISO 15189	RvA-F004-2
<input type="checkbox"/> Inspectie	EN ISO/IEC 17020	RvA-F005
<input type="checkbox"/> Organiseren van interlaboratorium-vergelijkingen	EN ISO/IEC 17043	RvA-F033
<input type="checkbox"/> Certificatie van producten (inclusief diensten en processen)	EN ISO/IEC 17065	RvA-F006-1
<input type="checkbox"/> Certificatie van managementsystemen	EN ISO/IEC 17021-1	RvA-F006-2
<input type="checkbox"/> Certificatie van personen	EN ISO/IEC 17024	RvA-F006-3
<input type="checkbox"/> Verificatie volgens de EMAS regeling	EMAS-verordening nr. 1221/2009	RvA-F006-4
<input type="checkbox"/> Productie van referentiematerialen	ISO 17034	RvA-F042
<input type="checkbox"/> Validatie en verificatie van verklaringen inzake broeikasgassen	EN ISO 14065	RvA-F018
<input type="checkbox"/> Anders (specificeer):		

<sup>1)</sup> Voor de meeste accreditatienormen zijn richtlijnen of toelichtingen gepubliceerd. Informatie hierover vindt u op onze website ([www.rva.nl](http://www.rva.nl)), de website van de Europese coöperatie voor Accreditatie ([www.european-accreditation.org](http://www.european-accreditation.org)), de Internationale Laboratorium Accreditatie Coöperatie ([www.ilac.org](http://www.ilac.org)), het Internationale Accreditatie Forum ([www.iaf.nu](http://www.iaf.nu)) en de Internationale Organisatie voor Normalisatie ([www.iso.org](http://www.iso.org)).

# 5.1.2.e



### **DEEL 3: TE VERSTREKKEN DOCUMENTEN**

In aanvulling op de gegevens die via dit formulier en het aanvullende aanvraagformulier worden verstrekt, verzoeken we u documenten te overleggen waarin de volgende informatie is gegeven (voor zover van toepassing):

Te verstrekken documenten	Specificatie van aangeleverde documenten
Bewijs van inschrijving bij de Kamer van Koophandel (niet ouder dan 6 maanden)	Zie bijlage
Een organisatieschema en beschrijving van uw organisatiestructuur.	Zie bijlage
De documentatie van het kwaliteitsmanagementsysteem, bestaande uit het kwaliteitshandboek en de procedures waarmee invulling wordt gegeven aan de accreditatievereisten, zoals vermeld in de <b>kruisverwijzingstabel</b> tussen uw systeem en de criteria uit de accreditatienorm (zie het model in het aanvullend aanvraagformulier).	Wordt separaat toegestuurd
Rapportages van de meest recente interne audit(s) en directiebeoordeling (beide niet ouder dan 6 maanden) waarmee vastgesteld is dat uw organisatie voor de desbetreffende activiteiten aan de accreditatievereisten voldoet.	Wordt separaat toegestuurd

Wij verzoeken u de documenten te voorzien van een duidelijke inhoudsopgave en gebruiksinstructie.

**5.1.2.e**

#### **DEEL 4: TOELICHTING OP DE BEHANDELING VAN EEN AANVRAAG**

- I. Stuur het volledig ingevulde en ondertekende formulier samen met het aanvullend aanvraagformulier en de documentatie via e-mail naar uw contactpersoon of naar [nieuweraanvragen@rva.nl](mailto:nieuweraanvragen@rva.nl)). Indien u assistentie nodig heeft bij het invullen van dit formulier of het aanvullend aanvraagformulier, aarzel dan niet contact met de RvA op te nemen. Wij helpen u graag op weg.
- II. De ontvangst van uw aanvraag zal schriftelijk worden bevestigd.
- III. De RvA zal de ontvankelijkheid van de aanvraag beoordelen. Indien de aanvraag als ontvankelijk wordt aangemerkt zullen we u binnen 20 werkdagen een bevestiging sturen van de acceptatie van de aanvraag. In de bevestigingsbrief wordt uw registratienummer vermeld en de naam van de RvA Procesmanager Accreditaties die aan uw Instelling is toegewezen.
- IV. Indien de aanvraag niet compleet of niet correct is, zullen we dat eveneens binnen 20 werkdagen schriftelijk aan u melden, onder opgave van de stukken die nog ontbreken of de correctie die noodzakelijk is en de termijn waarbinnen de aanvraag gecompleteerd en/of gecorrigeerd kan worden. Vult u de aanvraag niet tijdig aan, dan kunnen wij besluiten deze niet in behandeling te nemen.
- V. Na acceptatie van de aanvraag sturen we u een voorschotnota voor het vooronderzoek. Tevens informeren we u daarbij over de samenstelling van het beoordelingsteam voor dit vooronderzoek. De datum voor het vooronderzoek zullen we in overleg met u bepalen; hierbij moeten we rekening houden met de beschikbaarheid van de teamleden. Het vooronderzoek zal uitgevoerd worden op voorwaarde dat de voorschotnota is voldaan.

5.1.2.e

## Validation Report

### KingFisherFlex Purification system MagMAX Viral/PathogenII Nucleic Acid Isolation Kit - Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit

#### Workflow 3

In-house validation and performance characteristics of a high throughput COVID-19 qRT-PCR detection assay

Author: 5.1.2.e and 5.1.2.e

Date: 22-7-2021

Pure Medical  
Olivier van Noortlaan 120  
3133 AT Vlaardingen, The Netherlands

#### Aim of the Validation

The aim of the validation is to determine the analytical sensitivity and specificity of the analysis system for the SARS-CoV-2 virus.

The KingFisherFlex Purification system MagMAX Viral/PathogenII Nucleic Acid Isolation Kit is intended as an accessory for the isolation of viral RNA and DNA (depending on the viral particle to be detected) from nasopharyngeal and oropharyngeal swab samples. The excellent purity of the isolated viral nucleic acid isolated with the KingFisherFlex Purification system MagMAX Viral/PathogenII Nucleic Acid Isolation Kit allows immediate use in downstream applications such as PCR assays.

The verification is done with two different analytical runs by two different technicians.

#### Sample Collection and Transport

Human oropharyngeal and nose samples swabs arrive in viral transport medium (EchoSafe). All samples should be processed as soon as possible.

The oropharyngeal and nose samples were taken by GGD personnel.

Samples were collected at the GGD and transported to Pure Medical laboratory. All samples were individually divided into two parts: half of the sample specimen was analysed by reference laboratory Novogenia and the other half was analysed at our laboratory.



### RNA extraction

The RNA extraction takes place with the MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit (Cat. No. A48383) with the King Fisher FLEX purification system. This kit is designed to recover RNA and DNA from viral particles contained in viral transport media (VTM). The kit utilizes MagMAX™ magnetic-bead technology, ensuring reproducible recovery of high-quality nucleic acid.

### RT-qPCR

RT-qPCR was performed using the Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit which targets the highly conserved regions within the viral genes N-Gene, ORF-1 ab and S-Gene. All reactions were performed on a Quantstudio 5 (Thermo Fisher Scientific, Applied Biosystems) according to the manufacturers' instructions in 10µl reaction volumes on 96-well PCR plates. Clinical samples were confirmed using the PhoenixDx® 2019-nCoV RNA Detection Kit / Analytica REALQUALITY RQ-2019-nCoV.

### **WORKFLOW 3 KingFisherFlex Purification system MagMAX Viral/PathogenII Nucleic Acid Isolation Kit - Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit**

We refer to our SOP Workflow 3 for the sample extraction and PCR determination.

We compare our results with the results of the reference laboratory Novogenia, see the table.

### WORKFLOW INFORMATION

Workflow	Sample Preparation Kit	PCR Instrument	PCR Kit	Sample Preparation Duration	PCR Duration
Comparator (Reference) Novogenia	Qiagen Biorobot Universal/Quick viral kit ( Zymo research)	Viaa 7 - Thermofisher	Phoenix-DX-SARS-COV 2	Setup: 15 min.	Setup: 15 min.
				Run: 45 min.	Run: 138 min.
					Analyses: 5 min.
Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit / KingFisherFlex Purification system MagMAX Viral/PathogenII Nucleic Acid Isolation Kit	MagMAX Viral/PathogenII Nucleic Acid Isolation Kit	Quant Studio 5	Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit	Setup: 15 min.	Setup: 5 min.
				Run: 23 min.	Run: 64 min.
					Analyses: 5 min.

SP Platform / SP Kit	Sample/Elution volume
Qiagen Biorobot Universal/Quick viral kit ( Zymo research)	200 µL / 60 µL
MagMAX Viral/PathogenII Nucleic Acid Isolation Kit	200µL / 50 µL

PCR Instrument	PCR Kit	Method
Viaa 7 - Thermofisher	Phoenix-DX-SARS-COV 2	Qual.
Quant Studio 5	Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit	Qual.





## CLINICAL SAMPLE INFORMATION

139 human respiratory swab samples for analysis

## RESULTS

MagMAX Viral/Pathogen II Nucleic Acid Isolation Kit

		Phoenix-DX-SARS-COV 2		
$\Sigma$ Samples	139	POS	NEG	$\Sigma$ Samples
Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit	POS	83	0	83
	NEG	0	56	56
	$\Sigma$ Samples	83	56	139

Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit	AVE (Ct IC)	SD (Ct IC)	MIN (Ct IC)	MAX (Ct IC)
Swabs	31	1	29	31

Sensitivity 100%  
Specificity 100%

## Conclusion

We established and validated a high throughput SARS-CoV-2 qRT-PCR detection workflow using samples collected in transport media, a magnetic bead RNA isolation, and a 96-well format RT-qPCR assay. Our data demonstrates a highly specific and sensitive workflow ensuring a robust analytical and clinical performance. We conclude that the results are according to standards.

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @gmail.com; 5.1.2.e @puregeneticlifestyle.com; 5.1.2.e @puregeneticlifestyle.com  
**Cc:** 5.1.2.e  
**Onderwerp:** 5.1.2.e inspectiebezoek Pure Medical; Vorderen van informatie  
**Datum:** donderdag 18 november 2021 11:05:00  
**Bijlagen:** [image002.jpg](#)  
[20211104\\_Pure\\_Medical bezoeksverslag 4 november.pdf](#)

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Geachte heer 5.1.2.e ,

Tijdens het bezoek dat de Inspectie Gezondheidszorg en Jeugd op 4 november 2021 uitvoerde bij Pure Medical B.V., is afgesproken dat de inspectie uiterlijk **15 november** 2021 aanvullende documentatie zou ontvangen van u.

Dit is door u bevestigd tijdens het inspectie bezoek op 4 november 2021. Ik constateer dat deze informatie echter niet is ontvangen.

Ik wijs u er nogmaals op dat de inspectie als toezichthouder bevoegd is om inlichtingen aan u te vragen. U bent op grond van artikel 5:20 van de Algemene wet bestuursrecht verplicht om een toezichthouder binnen een door hem gestelde redelijke termijn alle medewerking te verlenen die deze redelijkerwijs kan vorderen bij de uitoefening van zijn bevoegdheden. Indien u weigert mee te werken aan het toezicht kan de inspectie medewerking met een last onder dwangsom afdwingen.

Vorderen van informatie

Ik vorder bij deze, op grond van artikel 5:16 en 5:17 van de Algemene wet bestuursrecht de volgende informatie van u:

*De heer 5.1.2.e geeft aan dat op dit moment ongeveer 10% van de samples in Vlaardingen en dat 90% van de samples in Oostenrijk bij Novogenia worden bepaald.*

➤ *De heer 5.1.2.e geeft aan de exacte cijfers aan de inspectie te zullen versturen (gespecificeerd per week).*

*De inspectie vraagt of het uitvoeren van SARS-CoV-2 diagnostiek in het laboratorium in Vlaardingen in overeenstemming is met het contact van Dienst Testen. De heer 5.1.2.e kan deze vraag tijdens het inspectiebezoek niet beantwoorden.*

➤ *Hij geeft aan dat hij bij Dienst Testen gaat informeren of hij het contract en/of deze details met de inspectie mag delen. Hij zal de inspectie hierover informeren.*

*Voor de PM aangeboden SARS-CoV-2 diagnostiek ligt de vakinhoudelijke verantwoordelijkheid bij moleculair medisch microbioloog (MMM) dr. 5.1.2.e 5.1.2.e).*

➤ *PM zal de voor- en achternaam van de verantwoordelijk arts-microbioloog aan de inspectie doorgeven inclusief zijn contactgegevens en BIG-nummer.*

*PM geeft aan dat alle gebruikte apparatuur en reagentia CE-IVD zijn gemarkeerd en dat de betreffende workflows zijn geverifieerd op de locatie Vlaardingen.*

➤ *PM zal de inspectie een verificatie rapport toesturen en een tabel met alle gebruikte apparatuur en reagentia.*

*De heer 5.1.2.e geeft aan dat i.s.m. een extern bureau (Cartese) het ISO 15189 accreditatie proces is ingezet. De aanvraag is volgens de heer 5.1.2.e ingediend bij RvA en heeft PM een verklaring van volledigheid van de RvA gekregen.*

➤ *PM zal de verklaring van volledigheid van de RvA naar de inspectie toe sturen.*

*De heer 5.1.2.e geeft aan dat PM beschikt over Cloud gebaseerd KMS systeem (Zenya) voor beheer van o.a. het kwaliteitshandboek en procedures.*

➤ *De Inspectie wordt toegezegd toegang te krijgen tot dit KMS systeem.*

U dient de gevorderde informatie zo snel mogelijk en uiterlijk maandag **22 november** 2021 bij te inspectie aan te leveren. Indien u geen gehoor geeft aan deze vordering, of incomplete of onjuiste informatie verstrekt, dan pleegt u een misdrijf en kan de inspectie u tevens een last onder dwangsom opleggen.

Volledigheidshalve benadruk ik hierbij dat de inspectie zich te allen tijde het recht voorbehoudt om naast bovenstaande maatregelen andere stappen te ondernemen indien zij dit in het kader van waarborging van verantwoorde zorgverlening noodzakelijk acht.

Met vriendelijke groeten,

5.1.2.e  
5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518 | 6401DA | Heerlen | Nederland  
.....

T +31 (0)88 1205000  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....

---

Van: 5.1.2.e )

**Verzonden:** woensdag 10 november 2021 11:26

**Aan:** 5.1.2.e@puregeneticlifestyle.com' 5.1.2.e@puregeneticlifestyle.com>;

5.1.2.e@puregeneticlifestyle.com' <5.1.2.e@puregeneticlifestyle.com>;

5.1.2.e@gmail.com' 5.1.2.e@gmail.com>

**cc:** 5.1.2.e@igj.nl>

**Onderwerp:** RE: 5.1.2.e Aankondiging inspectiebezoek Pure Medical (PGL Finance B.V.)

Geachte heer 5.1.2.e

Op 4 november jl. bracht de Inspectie Gezondheidszorg en Jeugd (IGJ) een herbezoek aan Pure Medical B.V. op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen.

Omdat er een herbezoek heeft plaatsgevonden met dezelfde strekking, zullen wij beide bezoeken (van 14 juli & 4 november) combineren in 1 inspectierapport.

- Hierbij ontvangt u het gesprekverslag van 4 november met de gemaakte afspraken. De inspectie stelt u in de gelegenheid te reageren op feitelijke onjuistheden in dit gesprekverslag en ontvangt uw reactie hierop graag uiterlijk 17 november 2021.
- Van het bezoek van 14 juli ontvangt u nu dus nog geen inspectierapport. Mijn excuses hiervoor.  
Ik zal u deze week ook van dit bezoek een beknopt gesprekverslag sturen zodat u voor dit bezoek ook in de gelegenheid bent te reageren op feitelijke onjuistheden.

Als u nog vragen hebt hoor ik dat graag.

Met vriendelijke groeten,

5.1.2.e  
5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518 | 6401DA | Heerlen | Nederland  
.....

T +31 (0)88 1205000  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)  
[www.igj.nl](http://www.igj.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

**Van:** 5.1.2.e @gmail.com  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: antwoord aan de IGJ 17-11-21.docx  
**Datum:** donderdag 18 november 2021 15:42:37

---

Geachte Heer 5.1.2.e,

Ik heb de zaken handmatig aangepast in ons kwaliteitssysteem Zenya. U zou mij een plezier doen om me te laten weten of u nu wel een uitnodiging gehad heeft,

Met vriendelijke groet,

5.1.2.e .

---

**Van:** 5.1.2.e @igj.nl>  
**Verzonden:** donderdag 18 november 2021 15:07  
**Aan:** 5.1.2.e @gmail.com  
**CC:** 5.1.2.e @igj.nl>  
**Onderwerp:** RE: antwoord aan de IGJ 17-11-21.docx

Geachte heer 5.1.2.e,

Hartelijk dank voor de toegezonden informatie.

Betreft het KMS systeem Zenya zoals hieronder beschreven. Ik heb helaas nog geen uitnodiging/ contact/ inlog gegevens per email ontvangen.

1. De Inspectie wordt toegezegd toegang te krijgen tot dit KMS systeem.  
*Ons kwaliteitssysteem heet Zenya van de firma Infoland. U heeft hiervoor een uitnodiging ontvangen om een wachtwoord in te vullen. Het werkt als volgt.*
  - Uw logt in met uw wachtwoord.
  - Gaat naar de functie Raadplegen
  - Daarin vindt u alle documenten in volgorde van de ISO 15189 norm U wellicht bekend.
  - Mocht het niet lukken. U kunt mij bellen op 06 – 5.1.2.e .

Met vriendelijke groeten,

5.1.2.e

5.1.2.e

.....  
**afdeling medische technologie, team meldingen**

[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

[Inspectie Gezondheidszorg en Jeugd](#)

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Postbus 2518 | 6401DA | Heerlen | Nederland

.....  
T +31 (0)88 1205000

[meldpunt@igj.nl](mailto:meldpunt@igj.nl)

[www.igj.nl](http://www.igj.nl)

Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**

---

**Van:** 5.1.2.e @gmail.com 5.1.2.e @gmail.com>



**Verzonden:** donderdag 18 november 2021 14:31

**Aan:** 5.1.2.e [redacted] [@igi.nl](mailto:[redacted]@igi.nl)>

**cc:** 5.1.2.e [redacted] [@puregeneticlifestyle.com](mailto:[redacted]@puregeneticlifestyle.com)>; 5.1.2.e [redacted] [@puregeneticlifestyle.com](mailto:[redacted]@puregeneticlifestyle.com)

**Onderwerp:** antwoord aan de IGJ 17-11-21.docx

# Dubbel met doc 25

**Van:** 5.1.2.e [@gmail.com](#)  
**Aan:** 5.1.2.e [↓](#)  
**Onderwerp:** Kwaliteitssysteem  
**Datum:** donderdag 18 november 2021 15:54:31  
**Bijlagen:** [Gebruikershandleiding Pure Genetic \(Versie 1\).pdf](#)

---

Geachte Heer 5.1.2.e

Om het u wat gemakkelijker te maken. Hierbij een uitgebreide beschrijving van hoe te raadplegen in Zenya.

Succes er mee,

---

*Gebruikershandleiding: documenten zoeken en raadplegen in Zenya*

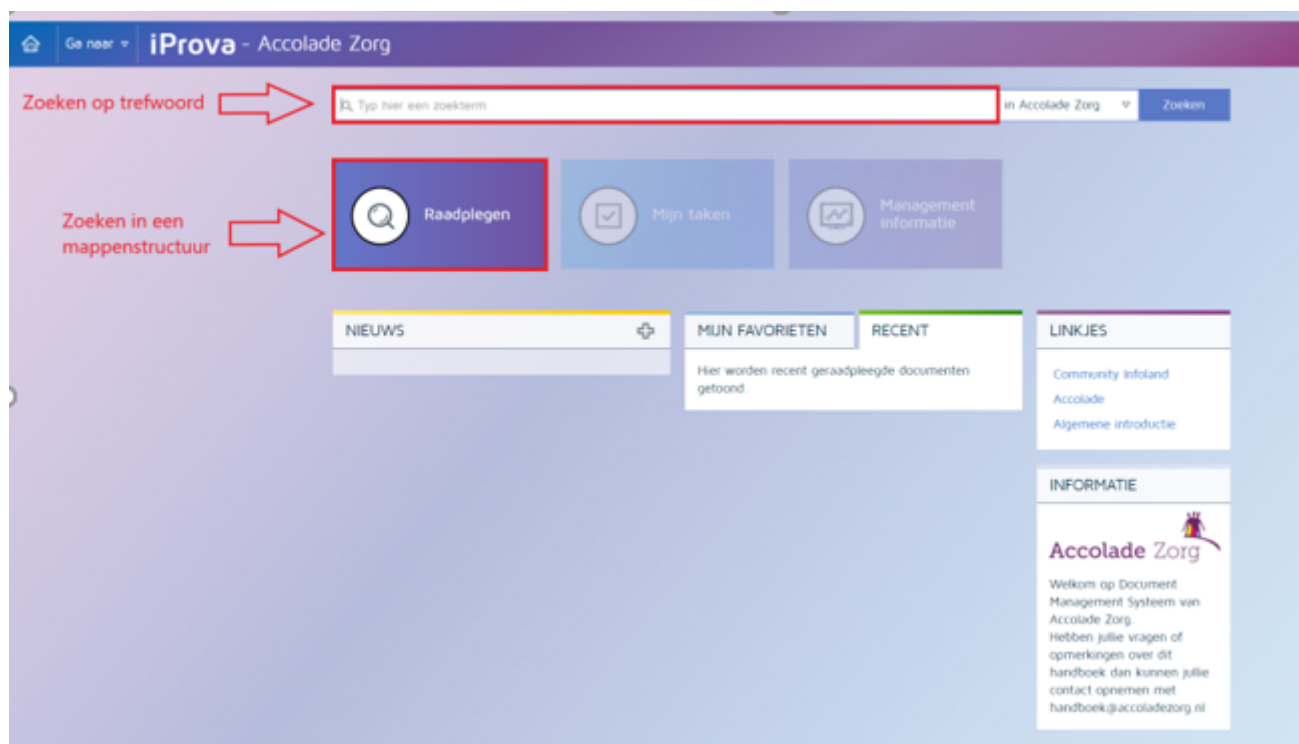
---

**Documenten opzoeken:**

Je kunt op 2 manieren documenten zoeken in Zenya. Dit doe je vanuit de startpagina (zie schermprintje)

Optie 1; Zoeken op trefwoord. Je vult hier een trefwoord in en Zenya laat alle documenten zien met dat trefwoord in de titel en/of document.

Optie 2; Zoeken in een mappenstructuur. Wanneer je de knop 'Raadplegen' aanklikt dan verschijnt er een mappenstructuur aan de linkerkant van je scherm. In elke map zitten 1 of meerdere documenten.



Bij optie 1 zoek ik in onderstaande voorbeeld op het woord 'infuus'. Ik krijg nu 190 resultaten (documenten) te zien onder de zoekbalk.

Aan de linkerkant van mijn scherm krijg ik een aantal velden te zien. Die velden zijn aan een aantal documenten gekoppeld. Deze velden kun je gebruiken om het aantal resultaten te filteren. Wanneer je bv onder het veld 'Verzameling' zou klikken op Cliënt processen dan krijg je nog maar 4 documenten te zien.

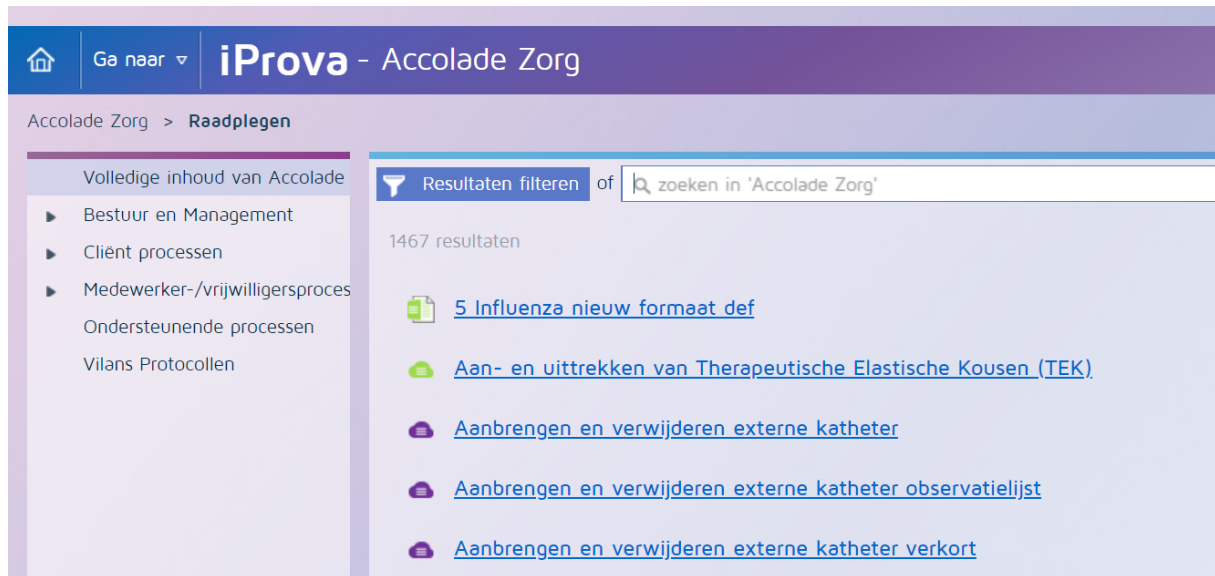
The screenshot shows the iProva search interface. The search bar at the top contains the word 'infuus'. Below the search bar, the results are listed as '190 resultaten'. On the left side, there are several filter categories: TITEL, TYPE, VERZAMELING, LOCATIE, and ONDERWERP. The 'VERZAMELING' category is highlighted with a red arrow pointing to it, and a red text box next to it says 'Met deze velden kun je de zoekresultaten verder filteren'. The search results are listed on the right side, starting with 'Toedienen medicijnen via subcutane infuuscanule spuitpomp'. A red arrow points to the search bar with the text 'Lijst met documenten op basis van het ingegeven trefwoord'.

The screenshot shows the iProva search interface after filtering. The search bar still contains 'infuus'. The results are now '4 resultaten'. The 'VERZAMELING' filter is selected, and the results are filtered to show only documents related to 'Cliënt processen'. The results are listed on the right side, starting with 'Handhygiëne - nieuw formaat- def'. A red arrow points to the 'VERZAMELING' filter, and another red arrow points to the 'Cliënt processen' option under it.



Bij optie 2 klik je op de knop raadplegen en dan krijg je een mappenstructuur te zien aan de linkerkant van het scherm.

Je kunt nu de volledige inhoud van Pure Genetic zien (alle documenten) of een map aanklikken;



Wanneer er voor een map een zwart driehoekje staat (bv bij 'Bestuur en Management') dan betekent dit dat er onder die betreffende map 1 of meerdere mappen zitten.

Deze open je door op het driehoekje te klikken. In onderstaand schermprintje zie je dat ik vervolgens de map 'Beleid' heb aangeklikt en dan zie ik de 19 documenten die in die map hangen;

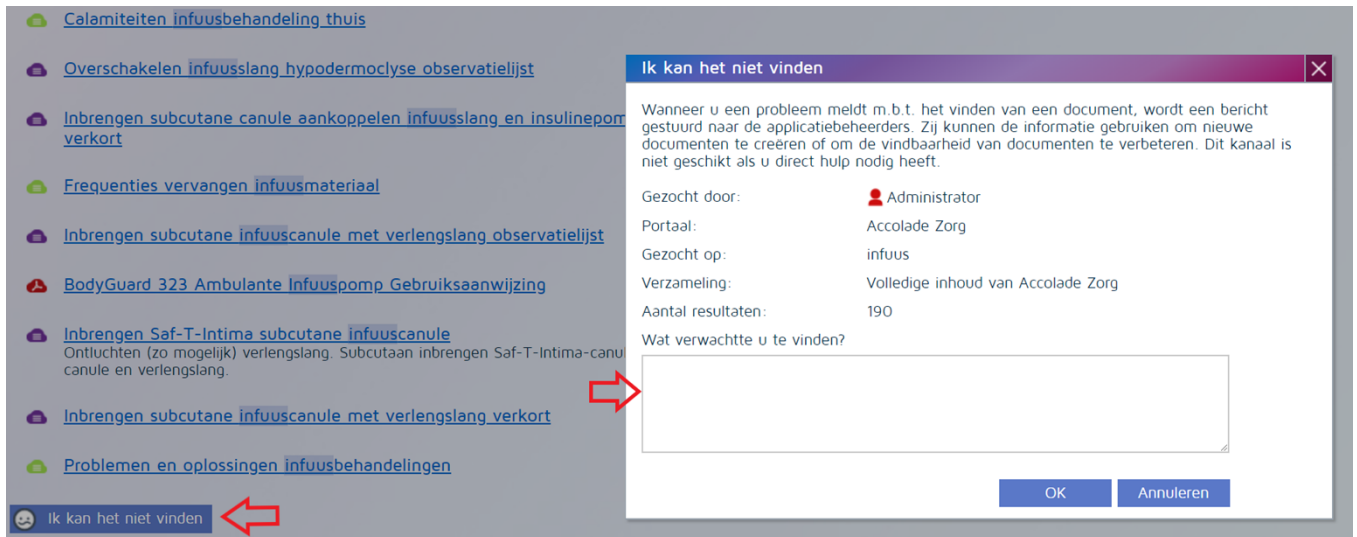


Wanneer je een map hebt aangeklikt kun je ook hier weer zoeken op trefwoord maar dan zoek je in de betreffende map.

## Wanneer je een document niet kunt vinden:

Wanneer je op een zoekwoord hebt gezocht en je kunt niet het juiste document vinden dan kun je onderaan de pagina klikken op de knop 'Ik kan het niet vinden'.

Er verschijnt dan een pop up in beeld en daar kun je ingeven welk document je had verwacht te vinden op basis van het ingevulde trefwoord. Deze informatie gaat naar de beheerder en hij/zij kan het document eventueel beter vindbaar maken.

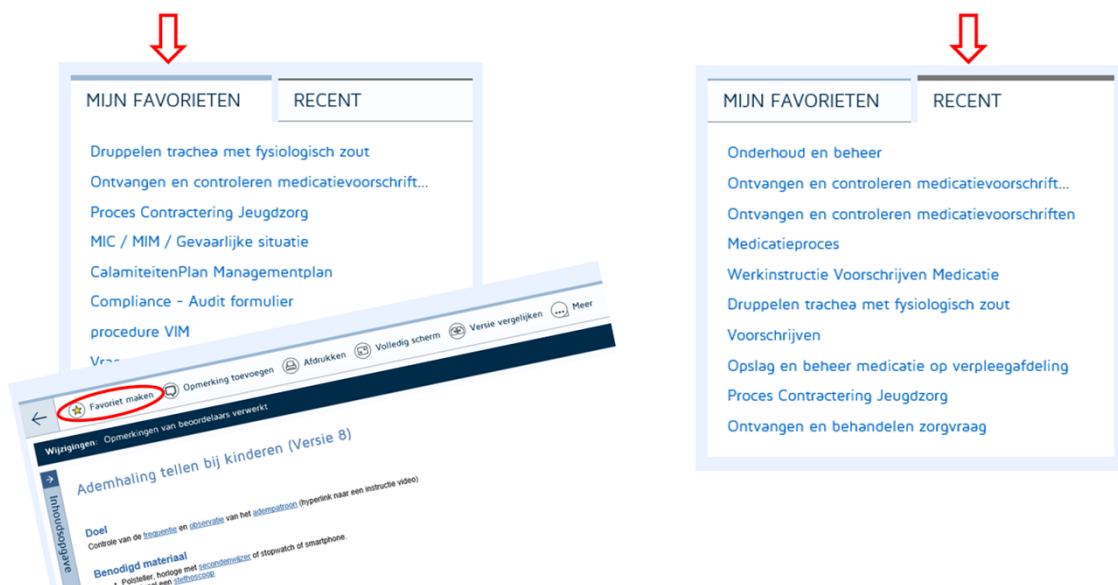


## Blijven vinden van documenten:

Op het startscherm staan 2 tabbladen; 'Mijn favorieten' en 'Recent'.

OP het tabblad 'Mijn favorieten' zie je documenten die je zelf hebt aangemerkt als favoriet (dit doe je door bovenaan een document te klikken op 'Favoriet maken'.

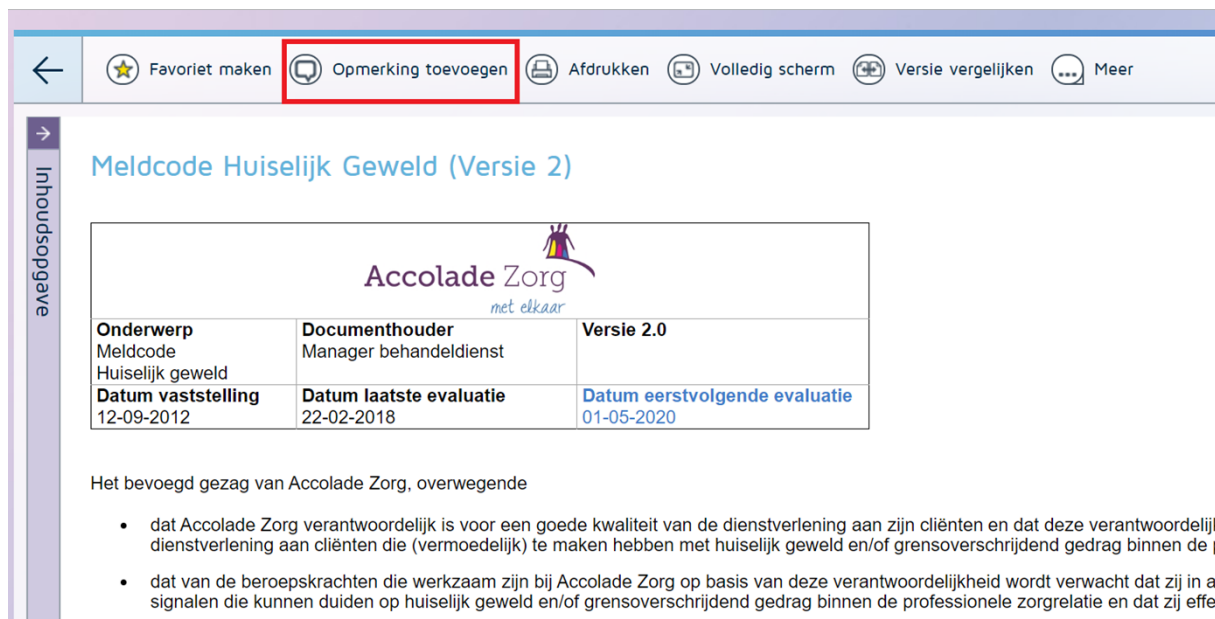
In het tabblad 'Recent' staan de documenten die je als laatste hebt geraadpleegd. Dit gaat automatisch.



## Opmerkingen plaatsen op een document:

Wanneer je een document raadpleegt en je hebt een opmerking op een document dan kun je dat via Zenya melden.

Bovenaan het document staan een aantal opties die je hebt als lezer van het document en daar staat bij 'Opmerking toevoegen'. Als je dit aan klikt kun je hier aangeven wat jouw opmerking is en over welke passage het gaat. De documentbeheerder van het betreffende document krijgt hiervan een bericht in zijn/haar mail en kan vervolgens het document aanpassen (waar nodig);



The screenshot shows the Zenya document viewer interface. At the top, there is a toolbar with several icons and labels: a back arrow, 'Favoriet maken' (Make favorite), 'Opmerking toevoegen' (Add comment) which is highlighted with a red box, 'Afdrukken' (Print), 'Volledig scherm' (Full screen), 'Versie vergelijken' (Compare versions), and 'Meer' (More). Below the toolbar, the document title 'Meldcode Huiselijk Geweld (Versie 2)' is displayed. On the left side, there is a vertical sidebar with the label 'Inhoudsopgave' (Table of contents). The main content area features the 'Accolade Zorg' logo with the tagline 'met elkaar'. Below the logo is a table with the following information:

<b>Onderwerp</b> Meldcode Huiselijk geweld	<b>Documenthouder</b> Manager behandeldienst	<b>Versie 2.0</b>
<b>Datum vaststelling</b> 12-09-2012	<b>Datum laatste evaluatie</b> 22-02-2018	<b>Datum eerstvolgende evaluatie</b> 01-05-2020

Below the table, the text 'Het bevoegd gezag van Accolade Zorg, overwegende' is followed by a bulleted list:

- dat Accolade Zorg verantwoordelijk is voor een goede kwaliteit van de dienstverlening aan zijn cliënten en dat deze verantwoordelijk dienstverlening aan cliënten die (vermoedelijk) te maken hebben met huiselijk geweld en/of grensoverschrijdend gedrag binnen de p...
- dat van de beroepskrachten die werkzaam zijn bij Accolade Zorg op basis van deze verantwoordelijkheid wordt verwacht dat zij in al signalen die kunnen duiden op huiselijk geweld en/of grensoverschrijdend gedrag binnen de professionele zorgrelatie en dat zij effe...

**Van:** 5.1.2.e [@gmail.com](#)  
**Aan:** 5.1.2.e [↓](#)  
**Onderwerp:** Coomentaar op het verslag van het inspectie bezoek  
**Datum:** donderdag 18 november 2021 16:40:40  
**Bijlagen:** [Commentaar op het verslag van de inspectie.docx](#)

---

Geachte Heer 5.1.2.e ,

Hierbij ons commentaar op uw verslag.

Met vriendelijke groet,

5.1.2.e ,

5.1.2.e

Pure Medical



## Commentaar op het inspectie bezoek van de IGJ

- Op het inspectiebezoek van 14 juli is een getrouw beeld gegeven van de toenmalige werkzaamheden. Mondeling is ons toen medegedeeld dat het in orde was. De heer 5.1.2.e heeft op de vragen van de inspectie schriftelijk geantwoord. Hierop heeft de inspectie niet gereageerd.
- De heer 5.1.2.e kan deze vraag niet beantwoorden. Dit moet zijn " De heer 5.1.2.e mag deze vraag niet beantwoorden. " PM heeft een geheimhoudingsverklaring getekend met de dienst testen over de inhoud van het contract. "

De vakinhoudelijke verantwoordelijkheid ligt bij de technisch directeur ondersteund door 5.1.2.e Dr 5.1.2.e . PM heeft een overeenkomst met Dr 5.1.2.e , 5.1.2.e .

- Het externe bureau " noemt zich A" ertezaA
- De heer 5.1.2.e geeft aan dat een RIE is uitgevoerd voor de monsters die naar Novogenia zijn verstuurd. PM beschikt nog niet over een volledige RIE. De RIE staat ingepland in het audit schema. Dit in het kader van het aanstaande bezoek van de Raad voor de Accreditatie.

5.1.2.e

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Afpersing en bedreiging  
**Datum:** zondag 21 november 2021 12:20:01

---

Geachte heer 5.1.2.e,

Ik wil U graag informeren over de ontwikkelingen in de zaak 5.1.2.e. Het stadium van afpersing en bedreiging is aangebroken. Zie in onderstaande een passage uit een lange mail, die wij van haar ontvangen hebben. Zoals reeds eerder gezegd, zijn haar beschuldigingen op niets gebaseerd en heeft zij totaal geen verstand van PCR. Het hele verhaal is verzonnen om "Los geld" te ontvangen voor het opzetten van haar extreme linkse ideaal. Dit dossier ligt op dit moment ter onderzoek bij de officier van Justitie. Deze bedreigingen zouden een gevaar voor de maatschappij kunnen zijn, door het imago van PCR onderzoek in twijfel te laten trekken door het grote publiek. De hele zaak wordt dus ook zeer serieus genomen en er wordt zelfs op Zondag verder onderzoek gedaan.

Deze hele zaak is naar voren gekomen, na een afwijzing van 5.1.2.e haar eigen voorstel voor PCR activiteiten samen te ontplooiën met PGL Finance. Dit voorstel staat reeds in de brief die jullie van ons ontvangen hebben.

*Mijn voorstel is over te gaan tot het ontbinden van het contract tussen PGL Finance B.V. en dhr. 5.1.2.e en het betalen van een afkoopsom van € 3.000.000 door PGL Finance voor schadeloosstelling. Alle eigendommen die behoren tot PGL, de communicatie met de GGD over vals negatieve resultaten, de foto's en data van uitslagen met afwijkende PCR- en missende extractie-controles en de interne communicatie over PCR uitslagen met gebreken die tegen GLP in toch gerapporteerd zijn, zullen worden overhandigd aan uw cliënt en van andere gegevensdragers worden verwijderd. Tevens zullen zowel dhr. 5.1.2.e als ikzelf ons onthouden van het doen van negatieve uitslatingen over PGL Finance, 5.1.2.e 5.1.2.e, 5.1.2.e en 5.1.2.e.*

Natuurlijk zijn wij 100% transparant en staan we open voor verdere vragen en onderzoek. Ik vind het toch belangrijk om bovenstaande over te brengen voor een heldere weergave van de zaak.

Met vriendelijke groeten,

5.1.2.e

Verstuurd vanaf mijn iPhone

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @gmail.com  
**Onderwerp:** Aanvullende documentatie workflow 3  
**Datum:** woensdag 15 december 2021 16:39:00

---

Geachte heer 5.1.2.e,

Nogmaals hartelijk dank voor de gesprekken die we gehad hebben op 14 juli en 4 november 2021.

Voor afronding en volledigheid van het concept inspectierapport aan Pure Medical zou ik u graag willen verzoeken om van "Workflow 3" van de fabrikant Thermo Fisher Scientific betreffende:

- MagMAX™ Viral/Pathogen II Nucleic Acid Isolation & King Fisher FLEX purification system
- Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit
- Quantstudio 5

Ons een kopie/foto te sturen van:

- De (digitale)gebruiksaanwijzingen/handleidingen
- Gebruikte reagentia
- Een foto van CE-IVD markeringen van de voor deze workflow gebruikte apparatuur (voor extractie, applicatie en detectie) op de locatie Vlaardingen.

Alvast hartelijk dank voor uw medewerking.

Met vriendelijke groeten,

5.1.2.e  
5.1.2.e

.....  
**afdeling medische technologie, team meldingen**  
[handreiking nieuwe regelgeving medische hulpmiddelen en invitro diagnostica](#)

**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 3521 AZ Utrecht  
Postbus 2518| 6401DA | Heerlen |Nederland

.....  
T +31 (0)88 1205000  
[meldpunt@iqj.nl](mailto:meldpunt@iqj.nl)  
[www.iqj.nl](http://www.iqj.nl)  
Twitter: [@IGJnl](#) LinkedIn [IGJ](#)

**Duidelijk. Onafhankelijk. Eerlijk.**  
.....

---

**Van:** 5.1.2.e @gmail.com 5.1.2.e @gmail.com>

**Verzonden:** donderdag 18 november 2021 16:41

**Aan:** 5.1.2.e @igj.nl>

**Onderwerp:** Coomentaar op het verslag van het inspectie bezoek

Dubbel met doc 37

**Van:** 5.1.2.e @gmail.com  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** RE: Aanvullende documentatie workflow 3  
**Datum:** woensdag 22 december 2021 11:01:02  
**Bijlagen:** [MAN0019215\\_RevG\\_TaqPathCOVID-19\\_CE-IVD\\_RT-PCRKit\\_IFU.pdf](#)  
[MAN0010407\\_QuantStudio3\\_5\\_InstallUseMaint\\_UG.pdf](#)  
[MAN0019746\\_MagMAX\\_MVP\\_II\\_NA\\_IsolationKit\\_CE-IVD\\_IFU.pdf](#)  
[Absolute\\_ethanol\\_KF\(002\).jpg](#)  
[Binding\\_beads\\_KF\(002\).jpg](#)  
[Binding\\_solution\\_KF\(002\).jpg](#)  
[Control\\_dilution\\_buffer\\_TaqPath\(002\).jpg](#)  
[Distilled\\_NFW\\_KF\(002\).jpg](#)  
[Elution\\_buffer\\_KF\(002\).jpg](#)  
[Kit\\_TaqPath\(002\).jpg](#)  
[MM\\_TaqPath\(002\).jpg](#)  
[MS2\\_TaqPath\(002\).jpg](#)  
[NFW\\_TaqPath\(002\).jpg](#)  
[MS2\\_TaqPath\(002\).jpg](#)  
[NFW\\_TaqPath\(002\).jpg](#)  
[Wash\\_solution\\_KF\(002\).jpg](#)

---

Geachte Heer 5.1.2.e

Uw heeft verzocht om aanvullende informatie. Deze is hierbij gevoegd.

Mocht er nog iets ontbreken dan hoor ik dat graag,

Mag ik u alvast fijne feestdagen toewensen,

Met Vriendelijke groet,

5.1.2.e

5.1.2.e Pure Medical

# Dubbel met doc 40



# TaqPath™ COVID-19 CE-IVD RT-PCR Kit

## INSTRUCTIONS FOR USE

Multiplex real-time RT-PCR test intended for the qualitative detection of nucleic acid from SARS-CoV-2

**Catalog Number** A48067

**Publication Number** MAN0019215

**Revision** G.0



For In Vitro Diagnostic Use.

**ThermoFisher**  
S C I E N T I F I C



Life Technologies Corporation |  
6055 Sunol Blvd |  
Pleasanton, California 94566 USA



Life Technologies Europe B.V.  
Kwartsweg 2, 2665 NN Bleiswijk  
The Netherlands

For descriptions of symbols on product labels or product documents, go to [thermofisher.com/symbols-definition](https://thermofisher.com/symbols-definition).

The customer is responsible for compliance with regulatory requirements that pertain to their procedures and uses of the instrument.

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**Revision history:** Pub. No. MAN0019215 (English)

Revision	Date	Description
G.0	29 March 2021	<ul style="list-style-type: none"><li>Removed the licensing statement covering Limited Use Label Licenses.</li><li>Updated the Intended use, the product description, the assay limitations, and reactivity (inclusivity).</li><li>Updated the contents and storage to include the software.</li><li>Provided new options for RT-PCR plates.</li><li>Added clinical performance evaluation.</li></ul>
F.0	1 March 2021	<ul style="list-style-type: none"><li>Added Applied Biosystems™ COVID-19 Interpretive Software v1.5 and Applied Biosystems™ COVID-19 Interpretive Software v2.5.</li><li>Removed Applied Biosystems™ COVID-19 Interpretive Software v1.3 and Applied Biosystems™ COVID-19 Interpretive Software v2.3.</li><li>Added general laboratory recommendations.</li><li>Updated template files for the following instruments:<ul style="list-style-type: none"><li>7500 Fast Dx Real-Time PCR Instrument</li><li>7500 Fast Real-Time PCR Instrument with SDS Software v1.5.1</li></ul></li><li>Updated instructions to obtain the COVID-19 Interpretive Software.</li><li>Added an optional step to review the amplification curve for each sample in the COVID-19 Interpretive Software.</li><li>Updated wording for the interpretation of results (Table 6 on page 57) and specified that the Ct for MS2 can be &gt;32 if any of the viral targets is positive (Table 15 on page 66).</li></ul>
E.0	15 July 2020	<ul style="list-style-type: none"><li>Added Applied Biosystems™ COVID-19 Interpretive Software v1.3 and Applied Biosystems™ COVID-19 Interpretive Software v2.3.</li><li>Removed Applied Biosystems™ COVID-19 Interpretive Software v1.2, Applied Biosystems™ COVID-19 Interpretive Software v2.1, and Applied Biosystems™ COVID-19 Interpretive Software v2.2.</li><li>Added new guidelines for sample collection, storage, packaging, and shipping to “Assay limitations” on page 13.</li><li>Added C<sub>t</sub> cutoff information (Appendix A, “C<sub>t</sub> cutoff values for assay targets”).</li><li>Updated instructions to seal, vortex, and centrifuge the RT-PCR plates.</li><li>Provided additional details for naming negative control wells in 384-well plates with unique names.</li><li>Updated reactivity (inclusivity) (page 60).</li><li>Added more information about Limit of Detection experiments to “Limit of detection (LoD)” on page 58.</li></ul>
D.0	2 June 2020	<ul style="list-style-type: none"><li>Removed instructions to mix by pipetting up and down 10 times when preparing RT-PCR plates. Added instructions to vortex the plates for 10–20 seconds to ensure proper mixing.</li><li>Added instructions to unseal and reseal one extraction plate at a time when preparing 384-well RT-PCR plates.</li><li>Updated instructions to create a unique name for each well in the physical plate, not only the wells with a patient sample.</li><li>Added Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 384-well block.</li></ul>

Revision	Date	Description
D.0 (continued)	2 June 2020	<ul style="list-style-type: none"> <li>Added QuantStudio™ 5 Dx IVD Software for the Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR Instrument.</li> <li>Added COVID-19 Interpretive Software v2.2.</li> <li>Updated retesting requirements for samples with inconclusive results.</li> </ul>
C.0	1 May 2020	<ul style="list-style-type: none"> <li>Updated specimen types to upper respiratory specimens (such as nasopharyngeal, oropharyngeal, nasal, and mid-turbinate swabs, and nasopharyngeal aspirate) and bronchoalveolar lavage (BAL) specimens ("Intended Use" on page 7, "Assay limitations" on page 13, and "Workflow" on page 15).</li> <li>Added procedures to perform RT-PCR with the following instruments: Applied Biosystems™ 7500 Real-Time PCR Instrument, Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instruments (96-well 0.1-mL block and 96-well 0.2-mL block), Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR Instrument, and QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block).</li> <li>Added new software versions: Applied Biosystems™ COVID-19 Interpretive Software v1.2 and Applied Biosystems™ COVID-19 Interpretive Software v2.1.</li> <li>Changed the shelf life of TaqPath™ COVID-19 Control Dilution Buffer from 9 months to 12 months.</li> <li>Updated guidelines extracted RNA (Chapter 3, "Guidelines for the RNA extracted from the sample").</li> <li>Updated requirements for controls based on the addition of 384-well real-time RT-PCR plates ("Guidelines for RT-PCR" on page 20).</li> <li>Added reaction plates without a barcode as an option for real-time RT-PCR (MicroAmp™ Fast Optical 96-Well Reaction Plate, 0.1 mL, MicroAmp™ Optical 96-Well Reaction Plate, 0.2 mL, and MicroAmp™ Optical 384-Well Reaction Plate).</li> <li>Created separate procedures to prepare the RT-PCR reactions based on the volume of sample input (<math>\leq 200 \mu\text{L}</math> or <math>&gt; 200 \mu\text{L}</math>), the RT-PCR plate (96-well or 384-well), and added specific instructions to vortex and centrifuge the reaction plate.</li> <li>Specified that retesting must be done with the original sample ("Interpretation of the results" on page 57).</li> <li>Updated control requirements in interpretation of results, based on addition of 384-well real-time RT-PCR plates ("Interpretation of the results" on page 57).</li> <li>Added "Interfering substances" on page 60.</li> <li>Removed references to COVID-19 Interpretive Software v1.1.</li> </ul>
B.0	27 March 2020	<ul style="list-style-type: none"> <li>Corrected description of MS2 Phage Control in 'Product Description' from DNA Control to RNA Control.</li> <li>Expanded description of the service and technical support information available at <a href="https://www.thermofisher.com/contactus">https://www.thermofisher.com/contactus</a> in 'Customer and technical support'.</li> <li>Changed the shelf life of the TaqPath™ COVID-19 Control Dilution Buffer.</li> </ul>
A.0	24 March 2020	New document.

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# TaqPath™ COVID-19 CE-IVD RT-PCR Kit product information

## Intended Use

The TaqPath™ COVID-19 CE-IVD RT-PCR Kit contains the reagents and controls for a real-time reverse transcription polymerase chain reaction (RT-PCR) test intended for the qualitative detection of nucleic acid from SARS-CoV-2 in upper respiratory specimens (such as nasopharyngeal, oropharyngeal, nasal, and mid-turbinate swabs, and nasopharyngeal aspirate), bronchoalveolar lavage (BAL) specimens, and saliva specimens from individuals suspected of COVID-19. For *in vitro* diagnostic use.

Results are for the identification of SARS-CoV-2 RNA. The Applied Biosystems™ COVID-19 Interpretive Software CE-IVD Edition must be used for interpretation of the results generated by the assay. The SARS-CoV-2 RNA is generally detectable in upper respiratory, bronchoalveolar lavage (BAL), and saliva specimens during the acute phase of infection. Positive results are indicative of the presence of SARS-CoV-2 RNA; clinical correlation with patient history and other diagnostic information is necessary to determine patient infection status.

Positive results do not rule out bacterial infection or co-infection with other viruses. The agent detected may not be the definite cause of disease. Laboratories may be required to report all positive results to the appropriate Competent Health Authorities.

Negative results do not preclude SARS-CoV-2 infection and should not be used as the sole basis for patient management decisions. Negative results must be combined with clinical observations, patient history, and epidemiological information.

Testing with the TaqPath™ COVID-19 CE-IVD RT-PCR Kit is intended for use by qualified and trained clinical laboratory personnel specifically instructed and trained in the techniques of real-time PCR and *in vitro* diagnostic procedures.

## Product description

TaqPath™ COVID-19 CE-IVD RT-PCR Kit includes the following components:

- TaqPath™ COVID-19 RT-PCR Kit, 1000 reactions
  - TaqPath™ COVID-19 Assay Multiplex—Multiplexed assays that contain three primer/probe sets specific to different SARS-CoV-2 genomic regions and primers/probes for bacteriophage MS2.
  - MS2 Phage Control—RNA control to verify the efficacy of the sample preparation and the absence of inhibitors in the PCR reaction. To perform the control, add MS2 Phage Control to the samples before extraction of the RNA.
- TaqPath™ COVID-19 Control—RNA control that contains targets specific to the SARS-CoV-2 genomic regions targeted by the assays.

- TaqPath™ COVID-19 Control Dilution Buffer—Dilution buffer to formulate the TaqPath™ COVID-19 Control.
- TaqPath™ 1-Step Multiplex Master Mix (No ROX)—Ready-to-use PCR mix, including polymerase, dNTP, and salt buffer.
- Package insert—Provides the instructions and the link to download the Instructions for Use and the Applied Biosystems™ COVID-19 Interpretive Software.

## Contents and storage

Table 1 TaqPath™ COVID-19 CE-IVD RT-PCR Kit, 1,000 reactions (Cat. No. [A48067](#))

Component	Contents	Quantity	Volume per tube or bottle	Unit part number	Storage	Shelf life <sup>[1]</sup>
TaqPath™ COVID-19 RT-PCR Kit	TaqPath™ COVID-19 Assay Multiplex (Gene ORF1ab, N Protein, S Protein, MS2)	1 tube	1,500 µL (1,000 reactions)	100093311	–30°C to –10°C	12 months
	MS2 Phage Control	10 tubes	1 mL	100093312	–30°C to –10°C	12 months
TaqPath™ COVID-19 Control		10 tubes	10 µL (1 x 10 <sup>4</sup> copies / µL)	100093314	≤ –70°C	12 months
TaqPath™ COVID-19 Control Dilution Buffer		10 tubes	250 µL	100093291	–30°C to –10°C	12 months
TaqPath™ 1-Step Multiplex Master Mix (No ROX)		1 bottle	10 mL	A48111	–30°C to –10°C	12 months
Applied Biosystems™ COVID-19 Interpretive Software CE-IVD Edition v1.5		<ul style="list-style-type: none"><li>• “Instrument and software compatibility” on page 11</li><li>• “Obtain the Applied Biosystems™ COVID-19 Interpretive Software” on page 55</li></ul>		100098243	n/a <sup>[2]</sup>	n/a <sup>[2]</sup>
Applied Biosystems™ COVID-19 Interpretive Software CE-IVD Edition v2.5				100098246	n/a <sup>[2]</sup>	n/a <sup>[2]</sup>

<sup>[1]</sup> The shelf life of the kit is determined by the component with the shortest shelf life.

<sup>[2]</sup> n/a: not applicable

## Required materials not supplied

Unless otherwise indicated, all materials are available through [thermofisher.com](https://www.thermofisher.com). "MLS" indicates that the material is available from [fisherscientific.com](https://www.fisherscientific.com) or another major laboratory supplier.

Catalog numbers that appear as links open the web pages for those products.

Item	Source
<b>Real-time PCR instrument</b>	
Applied Biosystems™ 7500 Fast Dx Real-Time PCR Instrument (used with SDS Software v1.4.1)	4406984 (with laptop computer) 4406985 (with tower computer)
Applied Biosystems™ 7500 Fast Real-Time PCR Instrument (used with SDS Software v1.5.1 or 7500 Software v2.3)	<a href="#">4351106</a> (with laptop computer) <a href="#">4351107</a> (with desktop computer)
Applied Biosystems™ 7500 Real-Time PCR Instrument (used with 7500 Software v2.3)	<a href="#">4351104</a> (with laptop computer) <a href="#">4351105</a> (with desktop computer)
Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 0.2-mL block (used with QuantStudio™ Design and Analysis Desktop Software v1.5.1)	A28569 (with laptop computer) A28574 (with desktop computer) A28139 (instrument only)
Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 0.1-mL block (used with QuantStudio™ Design and Analysis Desktop Software v1.5.1)	A28568 (with laptop computer) A28573 (with desktop computer) A28138 (instrument only)
Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 384-well block (used with QuantStudio™ Design and Analysis Desktop Software v1.5.1)	A28570 (with laptop computer) A28575 (with desktop computer) A28140 (instrument only)
Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR Instrument (used with QuantStudio™ 5 Dx TD Software v1.0.2 or QuantStudio™ 5 Dx IVD Software v1.0.2)	A32005 (with laptop computer) A32006 (with tower computer)
Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR Instrument, 384-well block (used with QuantStudio™ Real-Time PCR Software v1.3)	4485695 (with laptop computer) 4485701 (with desktop computer)
<b>Equipment</b>	
Laboratory freezers <ul style="list-style-type: none"> <li>• -30°C to -10°C</li> <li>• ≤ -70°C</li> </ul>	MLS
Centrifuge, with a rotor for microplates	MLS

(continued)

Item	Source
Microcentrifuge	MLS
Laboratory mixer, vortex or equivalent	MLS
Single and multichannel adjustable pipettors (1.00 µL to 1,000.0 µL)	MLS
Cold block (96-well or 384-well) or ice	MLS
<b>Kits and reagents</b>	
Nuclease-free Water (not DEPC-Treated)	MLS
<b>Calibration plates (7500 Real-Time PCR Instrument series)</b>	
ABY™ Dye Spectral Calibration Plate for Multiplex qPCR, Fast 96-well (0.1-mL)	A24734
JUN™ Dye Spectral Calibration Plate for Multiplex qPCR, Fast 96-well (0.1-mL)	A24735
ABY™ Dye Spectral Calibration Plate for Multiplex qPCR, 96-well (0.2-mL)	A24738
JUN™ Dye Spectral Calibration Plate for Multiplex qPCR, 96-well (0.2-mL)	A24737
<b>Calibration plates (QuantStudio™ 7 Flex Real-Time PCR Instrument)</b>	
ABY™ Dye Spectral Calibration Plate for Multiplex qPCR, 384-well	A24736
JUN™ Dye Spectral Calibration Plate for Multiplex qPCR, 384-well	A24733
<b>Tubes, plates, and other consumables</b>	
MicroAmp™ Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL	4346906, 4366932
MicroAmp™ Fast Optical 96-Well Reaction Plate, 0.1 mL	<a href="#">4346907</a>
MicroAmp™ Optical 96-Well Reaction Plate with Barcode, 0.2 mL	<a href="#">4306737</a> , <a href="#">4326659</a>
MicroAmp™ EnduraPlate™ Optical 96-Well Fast Clear Reaction Plates with Barcode	4483485, 4483494
MicroAmp™ EnduraPlate™ Optical 96-Well Fast Clear Reaction Plates	<a href="#">A36930</a>
MicroAmp™ Optical 96-Well Reaction Plate, 0.2 mL	<a href="#">N8010560</a> , <a href="#">4316813</a>



(continued)

Item	Source
MicroAmp™ EnduraPlate™ Optical 96-Well Clear Reaction Plates with Barcode	<a href="#">4483354</a> , <a href="#">4483352</a>
MicroAmp™ EnduraPlate™ Optical 96-Well Clear Reaction Plates	<a href="#">A36924</a>
MicroAmp™ Optical 384-Well Reaction Plate with Barcode	4309849, 4326270, 4343814
MicroAmp™ Optical 384-Well Reaction Plate	4343370
MicroAmp™ EnduraPlate™ Optical 384-Well Clear Reaction Plates with Barcode	<a href="#">4483285</a> , <a href="#">4483273</a>
MicroAmp™ EnduraPlate™ Optical 384-Well Clear Reaction Plates	<a href="#">A36931</a>
MicroAmp™ Optical Adhesive Film	<a href="#">4311971</a> , <a href="#">4360954</a>
MicroAmp™ Adhesive Film Applicator	<a href="#">4333183</a>
Nonstick, RNase-free microcentrifuge tubes (1.5 mL and 2.0 mL)	<a href="https://thermofisher.com/plastics">thermofisher.com/plastics</a>
Sterile aerosol barrier (filtered) pipette tips	<a href="https://thermofisher.com/pipettetips">thermofisher.com/pipettetips</a>

## Instrument and software compatibility

The following table lists the version of the Applied Biosystems™ COVID-19 Interpretive Software that is compatible with your instrument and its associated analysis software.

For information on how to obtain the Applied Biosystems™ COVID-19 Interpretive Software, see “Obtain the Applied Biosystems™ COVID-19 Interpretive Software” on page 55.

To obtain the analysis software or firmware for use with your real-time PCR instrument, go to [thermofisher.com/qpcrsoftware](https://thermofisher.com/qpcrsoftware), then select your instrument in the **Real-Time PCR** section.

Instrument	Analysis software used with the instrument	Compatible COVID-19 Interpretive Software version
7500 Fast Dx Real-Time PCR Instrument	SDS Software v1.4.1	v1.5
7500 Fast Real-Time PCR Instrument	SDS Software v1.5.1 or 7500 Software v2.3	v1.5
7500 Real-Time PCR Instrument	7500 Software v2.3	v1.5

(continued)

Instrument	Analysis software used with the instrument	Compatible COVID-19 Interpretive Software version
QuantStudio™ 5 Real-Time PCR Instrument with instrument firmware v1.3.3 96-well, 0.2-mL block 96-well, 0.1-mL block	QuantStudio™ Design and Analysis Desktop Software v1.5.1	v2.5
QuantStudio™ 5 Real-Time PCR Instrument with instrument firmware v1.3.3 384-well block	QuantStudio™ Design and Analysis Desktop Software v1.5.1	v2.5
QuantStudio™ 5 Dx Real-Time PCR Instrument with instrument firmware v1.0.3	QuantStudio™ 5 Dx TD Software v1.0.2	v2.5
QuantStudio™ 5 Dx Real-Time PCR Instrument with instrument firmware v1.0.3	QuantStudio™ 5 Dx IVD Software v1.0.2	v2.5
QuantStudio™ 7 Flex Real-Time PCR Instrument with instrument firmware v1.0.4 384-well block	QuantStudio™ Real-Time PCR Software v1.3	v2.5

## General laboratory recommendations

- Implement standard operating procedures in your laboratory to prevent contamination, such as the following:
  - Frequent glove changes
  - Frequent decontamination of surfaces, equipment, and pipettes with 10% bleach or decontamination solution, followed by 70% ethanol
  - Use of ultraviolet light during biosafety cabinet decontamination (when available)
- To prevent degradation, keep eluted sample RNA, master mixes, assays, and controls on ice or in cold blocks while in use.
- Limit freeze-thaw cycles.
- Aliquot reagents to prevent stock contamination and reduce the number of freeze-thaw cycles.
- After each run, review the amplification curves in the interpretive software for signs of inadequate vortexing or centrifugation. Contact your Applications Support team for additional information or training on data QC in your instrument software.

## Assay limitations

- This assay is intended to be used for *in vitro* diagnostic purposes only. Follow good laboratory practices and all precautions and guidelines in these user guides to avoid cross-contamination between samples.
- The TaqPath™ COVID-19 CE-IVD RT-PCR Kit performance on upper respiratory specimen was established using nasopharyngeal and oropharyngeal swab, nasopharyngeal aspirate, and bronchoalveolar lavage samples only. Nasal swabs and mid-turbinate swabs are considered acceptable specimen types according to the *Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19)* published by the Centers for Disease Control and Prevention, but performance of the TaqPath™ COVID-19 CE-IVD RT-PCR Kit with these specimen types has not been established. Testing of nasal and mid-turbinate nasal swabs (self-collected under supervision of or collected by a healthcare provider) is limited to patients with symptoms of COVID-19.
- The performance on saliva specimen was established with the TaqPath™ COVID-19 CE-IVD RT-PCR Kit and the MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit from saliva collected with the Spectrum Solutions™ SDNA Molecular Diagnostic Saliva Collection Devices.
- Saliva must be collected by passive drooling without coughing or throat clearing. Certain drugs, physiological conditions, or pathologies can reduce or increase salivary flow. The presence of the virus in saliva can be the result of both viral excretion from the salivary glands and the upper and lower respiratory tract. Improper saliva production methodology may hinder the ability of the assay to detect the target sequences. Though self-collected saliva may be acceptable, specimen collection without supervision may result in poor specimen quality, and may prevent the certification of the patient identity.
- Samples must be collected, transported, and stored using appropriate procedures and conditions. Improper collection, transport, or storage of specimens may hinder the ability of the assay to detect the target sequences.
- This kit uses purified RNA as a sample for the analysis. The quality of the RNA recovered from biological samples is essential for the quality of the results generated with this kit.
- False-negative results may arise from:
  - Improper sample collection
  - Degradation of the viral RNA during shipping/storage
  - Specimen collection after nucleic acid can no longer be found in the specimen matrix
  - Using poor extraction method
  - The presence of RT-PCR inhibitors
  - Mutation in the SARS-CoV-2 virus
  - Failure to follow instructions for use
  - Absence of specimen

- False-positive results may arise from:
  - Cross contamination during specimen handling or preparation
  - Cross contamination between patient samples
  - Specimen mix-up
  - RNA contamination during product handling
  - Fluorescence artefact in early amplification cycles caused by improper mixing or bubbles in the reaction mix
- The impacts of vaccines, antiviral therapeutics, antibiotics, chemotherapeutic or immunosuppressant drugs have not been evaluated. The TaqPath™ COVID-19 CE-IVD RT-PCR Kit cannot rule out diseases caused by other bacterial or viral pathogens.
- Negative results do not preclude infection with SARS-CoV-2 virus, and should not be the sole basis of a patient management decision.
- Laboratories may be required to report all positive results to the appropriate Competent Health Authorities.
- Use of saliva may be authorized under specific conditions defined by the Competent Health Authorities (e.g. with collection under supervision only / self-collection, for iterative testing, as secondary intention, under provision of test confirmation in case of positive saliva) and may be subject to restrictions at borders entry point in some Countries (travel). Always follow the applicable regulations of the concerned jurisdiction.

## Samples and controls

Patient samples must be collected according to appropriate laboratory guidelines. Positive and negative test controls must be included to accurately interpret patient test results.

Include the following controls:

Control	Used to monitor	Assays
Positive Control (TaqPath™ COVID-19 Control Kit)	RT-PCR reaction setup and reagent integrity	All three SARS-CoV-2 assays
MS2 Phage Control	RNA extraction and absence of inhibitors in the qPCR reaction	MS2 assay
Negative Control	Cross-contamination during RNA extraction and reaction setup	All three SARS-CoV-2 assays
		MS2 assay

## Workflow

The workflow begins with nucleic acid purified from upper respiratory specimens (such as nasopharyngeal, oropharyngeal, nasal, and mid-turbinate swabs, and nasopharyngeal aspirate) and bronchoalveolar lavage (BAL) specimens.

The purified nucleic acid is reverse transcribed into cDNA and amplified using the TaqPath™ COVID-19 CE-IVD RT-PCR Kit and one of the following real-time PCR instruments:

- Applied Biosystems™ 7500 Fast Dx Real-Time PCR instrument
- Applied Biosystems™ 7500 Fast Real-Time PCR Instrument
- Applied Biosystems™ 7500 Real-Time PCR Instrument
- Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 96-well, 0.2-mL block
- Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 96-well, 0.1-mL block
- Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument, 384-well block
- Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR Instrument
- Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR Instrument, 384-well block

In the process, probes anneal to three (3) target sequences that are specific to SARS-CoV-2. Each target is located between unique forward and reverse primers for the following genes:

- ORF1ab
- N Protein
- S Protein

During the extension phase of the PCR cycle, the 5' nuclease activity of Taq polymerase degrades the probe. This degradation causes the reporter dye to separate from the quencher dye, which generates a fluorescent signal. With each cycle, additional reporter dye molecules are cleaved from their respective probes, which increases the fluorescence intensity. Fluorescence intensity is monitored at each PCR cycle by the real-time PCR instrument.

The data are analyzed and interpreted by the Applied Biosystems™ COVID-19 Interpretive Software.

The workflow dedicated to test from saliva is detailed in the *TaqPath™ COVID-19 CE-IVD RT-PCR Kit with saliva Instructions for Use* (Pub. No. MAN0024936).



## Warnings and precautions

The TaqPath™ COVID-19 CE-IVD RT-PCR Kit workflow should be performed by qualified and trained staff to avoid the risk of erroneous results. Use separate areas for the preparation of patient samples and controls to prevent false positive results. Samples and reagents must be handled under a laminar airflow hood or biological safety cabinet.

- Specimens should always be treated as if infectious and/or biohazardous in accordance with safe laboratory procedures.
- Follow necessary precautions when handling specimens. Use personal protective equipment (PPE) consistent with current guidelines for the handling of potentially infectious samples.
- Always use pipette tips with aerosol barriers. Tips that are used must be sterile and free from DNases and RNases.
- Do not eat, drink, smoke, or apply cosmetic products in the work areas.
- Modifications to assay reagents, assay protocol, or instrumentation are not permitted, and are in violation of the *In Vitro Diagnostic Directive 98/79/EC*.
- Do not use the kit after the expiry date.
- Dispose of waste in compliance with the local regulations.
- Safety Data Sheets are available upon request.
- Laboratories may be required to report all positive results to the appropriate Competent Health Authorities.

The following countries require the CE-marked In Vitro Diagnostics: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK, Norway, Iceland, Liechtenstein, Switzerland, Turkey.

- Positive results are indicative of the presence of SARS-CoV-2 RNA.
- Handle all samples and controls as if they are capable of transmitting infectious agents.
- Reagents must be stored and handled as specified in Table 1.
- The quality of the sample preparation (purified RNA) may influence the quality of the qPCR test. Laboratories shall only use the purification method they have selected. Laboratories that do not have any selected method may use the MagMAX™ Viral/Pathogen Nucleic Acid Isolation Kit or the MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit.
- The qPCR kit includes an RNA phage control to verify the efficacy of the sample preparation and the absence of inhibitors in the PCR reaction. To perform the control, add MS2 Phage Control to the samples before extraction of the RNA, according to the recommendations in Chapter 3, “Guidelines for the RNA extracted from the sample”.

## Sample collection, transport, and storage

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**Note:** Handle all samples and controls as if they are capable of transmitting infectious agents.

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- Refer to the *Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19)*, published by the Centers for Disease Control and Prevention, for specimen collection and storage guidelines.
- Specimens must be packaged, shipped, and transported according to the current edition of the *International Air Transport Association (IATA) Dangerous Goods Regulations* ([iata.org/en/programs/cargo/dgr](https://www.iata.org/en/programs/cargo/dgr)).



# Guidelines for the RNA extracted from the sample

## Sample input volumes

To meet the need for a broad range of sample input volumes, 2 RT-PCR protocols are provided, depending on the sample input volume.

The following sample input volumes were tested:

- Low input: 200 µL
- High input: 400 µL

Sample input volumes > 400 µL have not been tested with the TaqPath™ COVID-19 CE-IVD RT-PCR Kit.

The following RNA extraction kits were tested:

- MagMAX™ Viral/Pathogen Nucleic Acid Isolation Kit
- MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit

## Guidelines for RNA extraction

Extracted RNA can be prepared with any standard RNA extraction procedure or RNA extraction kit. The minimum recommended elution volume is 50 µL.

The following guidelines are defined as optimal for the use of the TaqPath™ COVID-19 CE-IVD RT-PCR Kit.

- The MS2 Phage Control provided in the kit must be used to verify the efficacy of the sample preparation and the absence of inhibitors in the RT-PCR reaction. It is added to the sample before extraction (see “Add MS2 Phage Control” on page 19).
- Use Nuclease-free Water (not DEPC-Treated) containing MS2 Phage Control as the Negative Control. The purified Negative Control is used as the Negative Control for RT-PCR.
- We recommend that the volume of MS2 Phage Control is 2.5% of the sample input volume.

## Add MS2 Phage Control

The MS2 Phage Control must be used to verify the efficacy of the sample preparation and the absence of inhibitors in the RT-PCR reaction.

Add the appropriate volume of MS2 Phage Control to each sample well and to the Negative Control well just before lysis during RNA extraction.

We recommend that the volume of MS2 Phage Control is 2.5% of the sample input volume. Examples are provided in the table below:

Sample input volume	MS2 Phage Control volume
200 µL	5 µL MS2 Phage Control
400 µL	10 µL MS2 Phage Control

# 4

## Prepare RT-PCR reactions

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■ Prepare the RT-PCR reactions ( $> 200$ - $\mu$ L sample input volume, 96-well reaction plate) .....	25
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**Note:** The procedure used to prepare the RT-PCR reactions depends on the original sample input volume that was used during the preparation of RNA ( $\leq 200$   $\mu$ L or  $> 200$   $\mu$ L). The procedure used to prepare the RT-PCR reactions also depends on whether a 96-well plate or a 384-well plate is used for RT-PCR.

---

### Guidelines for RT-PCR

---

#### IMPORTANT!

- For each RT-PCR reaction plate, include the following controls:
    - One Positive Control
    - One Negative Control from each extraction run.  
For example, if RNA samples from 4 extraction runs are combined on one 384-well RT-PCR reaction plate, then 4 Negative Control wells must be run on that 384-well reaction plate.
  - Prepare the RT-PCR reaction plate on ice and keep it on ice until it is loaded into the real-time PCR instrument.
  - Run the plate immediately after preparation. Failure to do so could result in degraded RNA samples.
  - To prevent contamination, prepare reagents in a PCR workstation or equivalent amplicon-free area. Do not use the same pipette for controls and RNA samples, and always use aerosol barrier pipette tips.
  - Maintain an RNase-free environment.
  - Protect assays from light.
  - Keep RNA samples and components on ice during use.
-



## Prepare the RT-PCR reactions (≤200-μL sample input volume, 96-well reaction plate)

Use this procedure under the following conditions:

- Original sample input volume of up to 200 μL was used for extraction
  - Instrument is compatible with 96-well RT-PCR reaction plates
1. If frozen, thaw the reagents on ice.
  2. Gently vortex the reagents, then centrifuge briefly to collect liquid at the bottom of the tube.
  3. Dilute TaqPath™ COVID-19 Control ( $1 \times 10^4$  copies/μL) to a working stock of 25 copies/μL:
    - a. Pipet 98 μL of TaqPath™ COVID-19 Control Dilution Buffer into a microcentrifuge tube, then add 2 μL of TaqPath™ COVID-19 Control. Mix well, then centrifuge briefly.
    - b. Pipet 87.5 μL of TaqPath™ COVID-19 Control Dilution Buffer into a second microcentrifuge tube, then add 12.5 μL of the dilution created in substep 3a. Mix well, then centrifuge briefly.

---

**Note:** The TaqPath™ COVID-19 Control does not contain the MS2 template.

---

4. Prepare the Reaction Mix:
  - a. For each run, combine the following components sufficient for the number of RNA samples to be tested plus one Positive Control and one Negative Control.

All volumes include 10% overage for pipette error.

---

**IMPORTANT!** The volumes in this table assume that you extracted sample RNA using an original sample input volume of up to 200 μL.

---

Component	Volume per RNA sample or control	Volume for $n$ RNA samples plus 2 controls	Volume for 94 RNA Samples plus 2 controls
TaqPath™ 1-Step Multiplex Master Mix (No ROX™) (4X)	6.25 μL	$6.875 \times (n + 2)$ μL	660 μL
COVID-19 Real Time PCR Assay Multiplex	1.25 μL	$1.375 \times (n + 2)$ μL	132 μL
Nuclease-free Water	7.50 μL	$8.25 \times (n + 2)$ μL	792 μL
<b>Total Reaction Mix volume</b>	<b>15.0 μL</b>	—	<b>1584 μL</b>

5. Set up the reaction plate:
  - a. Pipet 15.0 μL of the Reaction Mix prepared in step 4 into each well of a MicroAmp™ Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL or a MicroAmp™ Optical 96-Well Reaction Plate with Barcode, 0.2 mL.

For other reaction plates that can be used, see “Required materials not supplied” on page 9.

- b. Gently vortex the sealed plate containing the purified sample RNA and Negative Control from the RNA extraction procedure, then centrifuge briefly to collect liquid at the bottom of the plate.
- c. Unseal the plate containing the purified sample RNA and Negative Control from the RNA extraction procedure. Add either sample RNA, Negative Control, or Positive Control to each well of the reaction plate according to Table 2 on page 22.
- d. Seal the plate thoroughly with MicroAmp™ Optical Adhesive Film.

**IMPORTANT!** When applying the MicroAmp™ Optical Adhesive Film, ensure that pressure is applied across the entire plate and that there is a tight seal across every individual well. Failure to do so runs the risk of an improperly sealed well, leading to potential well-to-well contamination during vortexing and evaporation during PCR.

- e. Vortex the plate at the highest setting speed for 10–30 seconds with medium pressure. Move the plate around to ensure equal contact on the vortex mixer platform.

**IMPORTANT!** Vortex for 10–30 seconds to ensure proper mixing. Failure to do so might result in false classification of samples.

- f. Centrifuge the reaction plate for 1–2 minutes at  $\geq 650 \times g$  ( $\geq 650$  RCF) to remove bubbles and to collect the liquid at the bottom of the reaction plate.

Table 2 Reaction plate volumes

Component	Volume per reaction		
	RNA Sample reaction	Positive Control reaction	Negative Control reaction
Reaction Mix	15.0 $\mu\text{L}$	15.0 $\mu\text{L}$	15.0 $\mu\text{L}$
Purified sample RNA (from RNA extraction)	10.0 $\mu\text{L}$	—	—
Positive Control (diluted TaqPath™ COVID-19 Control, from step 3)	—	2.0 $\mu\text{L}$	—
Nuclease-free Water	—	8.0 $\mu\text{L}$	—
Purified Negative Control (from RNA extraction)	—	—	10.0 $\mu\text{L}$
<b>Total volume</b>	<b>25.0 <math>\mu\text{L}</math></b>	<b>25.0 <math>\mu\text{L}</math></b>	<b>25.0 <math>\mu\text{L}</math></b>

## Prepare the RT-PCR reactions ( $\leq 200\text{-}\mu\text{L}$ sample input volume, 384-well reaction plate)

Use this procedure under the following conditions:

- Original sample input volume of up to 200  $\mu\text{L}$  was used for extraction
- Instrument is compatible with 384-well RT-PCR reaction plates

1. If frozen, thaw the reagents on ice.
2. Gently vortex the reagents, then centrifuge briefly to collect liquid at the bottom of the tube.
3. Dilute TaqPath™ COVID-19 Control ( $1 \times 10^4$  copies/ $\mu\text{L}$ ) to a working stock of 25 copies/ $\mu\text{L}$ :
  - a. Pipet 98  $\mu\text{L}$  of TaqPath™ COVID-19 Control Dilution Buffer into a microcentrifuge tube, then add 2  $\mu\text{L}$  of TaqPath™ COVID-19 Control. Mix well, then centrifuge briefly.
  - b. Pipet 87.5  $\mu\text{L}$  of TaqPath™ COVID-19 Control Dilution Buffer into a second microcentrifuge tube, then add 12.5  $\mu\text{L}$  of the dilution created in substep 3a. Mix well, then centrifuge briefly.

---

**Note:** The TaqPath™ COVID-19 Control does not contain the MS2 template.

---

4. Prepare the Reaction Mix.
  - a. For each run, combine the following components sufficient for the number of RNA samples, plus one Positive Control per 384-well real-time RT-PCR plate, and one Negative Control from each extraction run.  
  
For example, if RNA samples from 4 extraction runs are being combined on one 384-well real-time RT-PCR plate, then 4 Negative Control wells need to be run on that 384-well real-time RT-PCR plate.

All volumes include 10% overage for pipette error.

---

**IMPORTANT!** The volumes in this table assume that you extracted sample RNA using an original sample input volume of up to 200  $\mu\text{L}$ .

---

Component	Volume per RNA Sample or control	Volume for $n$ RNA Samples plus $y$ Negative Controls plus 1 Positive Control	Volume for 379 RNA Samples plus 4 Negative Controls plus 1 Positive Control
TaqPath™ 1-Step Multiplex Master Mix (No ROX™) (4X)	5.00 $\mu\text{L}$	$5.50 \times (n + y + 1) \mu\text{L}$	2112.0 $\mu\text{L}$
COVID-19 Real Time PCR Assay Multiplex	1.00 $\mu\text{L}$	$1.10 \times (n + y + 1) \mu\text{L}$	422.4 $\mu\text{L}$
Nuclease-free Water	4.00 $\mu\text{L}$	$4.40 \times (n + y + 1) \mu\text{L}$	1690.0 $\mu\text{L}$
<b>Total Reaction Mix volume</b>	<b>10.0 <math>\mu\text{L}</math></b>	—	<b>4224.4 <math>\mu\text{L}</math></b>

5. Set up the reaction plate:
  - a. Pipet 10.0  $\mu\text{L}$  of the Reaction Mix prepared in step 4 into each well of a MicroAmp™ Optical 384-Well Reaction Plate with Barcode.  
For other reaction plates that can be used, see “Required materials not supplied” on page 9.
  - b. Gently vortex the sealed plate containing the purified sample RNA and Negative Control from the RNA extraction procedure, then centrifuge briefly to collect liquid at the bottom of the plate.

- c. Unseal the plate containing the purified sample RNA and Negative Control from the RNA extraction procedure. Add either sample RNA, Negative Control, or Positive Control to each well of the reaction plate according to Table 3 on page 24.

---

**IMPORTANT!** To prevent sample contamination, unseal one extraction plate at a time, then reseal it after adding the samples to the RT-PCR reaction plate.

---

- d. Seal the plate thoroughly with MicroAmp™ Optical Adhesive Film.

---

**IMPORTANT!** When applying the MicroAmp™ Optical Adhesive Film, ensure that pressure is applied across the entire plate and that there is a tight seal across every individual well. Failure to do so runs the risk of an improperly sealed well, leading to potential well-to-well contamination during vortexing and evaporation during PCR.

---

- e. Vortex the plate at the highest setting speed for 10–30 seconds with medium pressure. Move the plate around to ensure equal contact on the vortex mixer platform.

---

**IMPORTANT!** Vortex for 10–30 seconds to ensure proper mixing. Failure to do so might result in false classification of samples.

---

- f. Centrifuge the reaction plate for 1–2 minutes at  $\geq 650 \times g$  ( $\geq 650$  RCF) to remove bubbles and to collect the liquid at the bottom of the reaction plate.

**Table 3** Reaction plate volumes

Component	Volume per reaction		
	RNA Sample reaction	Positive Control reaction	Negative Control reaction
Reaction Mix	10.0 $\mu\text{L}$	10.0 $\mu\text{L}$	10.0 $\mu\text{L}$
Purified sample RNA (from RNA extraction)	10.0 $\mu\text{L}$	—	—
Positive Control (diluted TaqPath™ COVID-19 Control from step 3)	—	2.0 $\mu\text{L}$	—
Nuclease-free Water	—	8.0 $\mu\text{L}$	—
Purified Negative Control (from RNA extraction)	—	—	10.0 $\mu\text{L}$
<b>Total volume</b>	<b>20.0 <math>\mu\text{L}</math></b>	<b>20.0 <math>\mu\text{L}</math></b>	<b>20.0 <math>\mu\text{L}</math></b>

## Prepare the RT-PCR reactions (>200-μL sample input volume, 96-well reaction plate)

Use this procedure under the following conditions:

- Original sample input volume of >200 μL, but ≤400 μL, was used for extraction

**Note:** A sample input volume >400 μL has not been tested with the TaqPath™ COVID-19 CE-IVD RT-PCR Kit.

- Instrument is compatible with 96-well RT-PCR reaction plates

1. If frozen, thaw the reagents on ice.

2. Gently vortex the reagents, then centrifuge briefly to collect liquid at the bottom of the tube.

3. Dilute TaqPath™ COVID-19 Control ( $1 \times 10^4$  copies/μL) to a working stock of 25 copies/μL:

- Pipet 98 μL of TaqPath™ COVID-19 Control Dilution Buffer into a microcentrifuge tube, then add 2 μL of TaqPath™ COVID-19 Control. Mix well, then centrifuge briefly.
- Pipet 87.5 μL of TaqPath™ COVID-19 Control Dilution Buffer into a second microcentrifuge tube, then add 12.5 μL of the dilution created in substep 3a. Mix well, then centrifuge briefly.

**Note:** The TaqPath™ COVID-19 Control does not contain the MS2 template.

4. Prepare the Reaction Mix:

- For each run, combine the following components sufficient for the number of RNA samples to be tested plus one Positive Control and one Negative Control.

All volumes include 10% overage for pipette error.

**IMPORTANT!** The volumes in this table assume that you extracted sample RNA using an original sample input volume between 201 μL and 400 μL.

Component	Volume per RNA Sample or control	Volume for $n$ RNA Samples plus 2 controls	Volume for 94 RNA Samples plus 2 controls
TaqPath™ 1-Step Multiplex Master Mix (No ROX™) (4X)	6.25 μL	$6.875 \times (n + 2)$ μL	660 μL
COVID-19 Real Time PCR Assay Multiplex	1.25 μL	$1.375 \times (n + 2)$ μL	132 μL
Nuclease-free Water	12.50 μL	$13.75 \times (n + 2)$ μL	1320 μL
<b>Total Reaction Mix volume</b>	<b>20.0 μL</b>	—	<b>2112 μL</b>

5. Set up the reaction plate:

- Pipet 20.0 μL of the Reaction Mix prepared in step 4 into each well of a MicroAmp™ Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL or a MicroAmp™ Optical 96-Well Reaction Plate with Barcode, 0.2 mL.

For other reaction plates that can be used, see “Required materials not supplied” on page 9.



- b. Gently vortex the sealed plate containing the purified sample RNA and Negative Control from the RNA extraction procedure, then centrifuge briefly to collect liquid at the bottom of the plate.
- c. Unseal the plate containing the purified sample RNA and Negative Control from the RNA extraction procedure. Add either sample RNA, Negative Control, or Positive Control to each well of the reaction plate according to Table 4 on page 26.
- d. Seal the plate thoroughly with MicroAmp™ Optical Adhesive Film.

---

**IMPORTANT!** When applying the MicroAmp™ Optical Adhesive Film, ensure that pressure is applied across the entire plate and that there is a tight seal across every individual well. Failure to do so runs the risk of an improperly sealed well, leading to potential well-to-well contamination during vortexing and evaporation during PCR.

---

- e. Vortex the plate at the highest setting speed for 10–30 seconds with medium pressure. Move the plate around to ensure equal contact on the vortex mixer platform.

---

**IMPORTANT!** Vortex for 10–30 seconds to ensure proper mixing. Failure to do so might result in false classification of samples.

---

- f. Centrifuge the reaction plate for 1–2 minutes at  $\geq 650 \times g$  ( $\geq 650$  RCF) to remove bubbles and to collect the liquid at the bottom of the reaction plate.

Table 4 Reaction plate volumes

Component	Volume per reaction		
	RNA Sample reaction	Positive Control reaction	Negative Control reaction
Reaction Mix	20.0 µL	20.0 µL	20.0 µL
Purified sample RNA (from RNA extraction)	5.0 µL	—	—
Positive Control (diluted TaqPath™ COVID-19 Control from step 3)	—	2.0 µL	—
Nuclease-free Water	—	3.0 µL	—
Purified Negative Control (from RNA extraction)	—	—	5.0 µL
<b>Total volume</b>	<b>25.0 µL</b>	<b>25.0 µL</b>	<b>25.0 µL</b>

## Prepare the RT-PCR reactions (>200-μL sample input volume, 384-well reaction plate)

Use this procedure under the following conditions:

- Original sample input volume of >200 μL, but ≤400 μL, was used for extraction

**Note:** A sample input volume >400 μL has not been tested with the TaqPath™ COVID-19 CE-IVD RT-PCR Kit.

- Instrument is compatible with 384-well RT-PCR reaction plates

1. If frozen, thaw the reagents on ice.

2. Gently vortex the reagents, then centrifuge briefly to collect liquid at the bottom of the tube.

3. Dilute TaqPath™ COVID-19 Control ( $1 \times 10^4$  copies/μL) to a working stock of 25 copies/μL:

- Pipet 98 μL of TaqPath™ COVID-19 Control Dilution Buffer into a microcentrifuge tube, then add 2 μL of TaqPath™ COVID-19 Control. Mix well, then centrifuge briefly.
- Pipet 87.5 μL of TaqPath™ COVID-19 Control Dilution Buffer into a second microcentrifuge tube, then add 12.5 μL of the dilution created in substep 3a. Mix well, then centrifuge briefly.

**Note:** The TaqPath™ COVID-19 Control does not contain the MS2 template.

4. Prepare the Reaction Mix.

- For each run, combine the following components sufficient for the number of RNA samples, plus one Positive Control per 384-well real-time RT-PCR plate, and one Negative Control from each extraction run.

For example, if RNA samples from 4 extraction runs are being combined on one 384-well real-time RT-PCR plate, then 4 Negative Control wells need to be run on that 384-well real-time RT-PCR plate.

All volumes include 10% overage for pipette error.

**IMPORTANT!** The volumes in this table assume that you extracted sample RNA using an original sample input volume between 201 μL and 400 μL.

Component	Volume per RNA Sample or control	Volume for $n$ RNA Samples plus $y$ Negative Controls plus 1 Positive Control	Volume for 379 RNA Samples plus 4 Negative Controls plus 1 Positive Control
TaqPath™ 1-Step Multiplex Master Mix (No ROX™) (4X)	5.00 μL	$5.50 \times (n + y + 1)$ μL	2112.0 μL
COVID-19 Real Time PCR Assay Multiplex	1.00 μL	$1.10 \times (n + y + 1)$ μL	422.4 μL
Nuclease-free Water	9.00 μL	$9.90 \times (n + y + 1)$ μL	3802.0 μL
<b>Total Reaction Mix volume</b>	<b>15.0 μL</b>	—	<b>6336.4 μL</b>

## 5. Set up the reaction plate:

- a. Pipet 15.0 μL of the Reaction Mix prepared in step 4 into each well of a MicroAmp™ Optical 384-Well Reaction Plate with Barcode.

For other reaction plates that can be used, see “Required materials not supplied” on page 9.

- b. Gently vortex the sealed plate containing the purified sample RNA and Negative Control from the RNA extraction procedure, then centrifuge briefly to collect liquid at the bottom of the plate.
- c. Unseal the plate containing the purified sample RNA and Negative Control from the RNA extraction procedure. Add either sample RNA, Negative Control, or Positive Control to each well of the reaction plate according to Table 5 on page 28.

**IMPORTANT!** To prevent sample contamination, unseal one extraction plate at a time, then reseal it after adding the samples to the RT-PCR reaction plate.

- d. Seal the plate thoroughly with MicroAmp™ Optical Adhesive Film.

**IMPORTANT!** When applying the MicroAmp™ Optical Adhesive Film, ensure that pressure is applied across the entire plate and that there is a tight seal across every individual well. Failure to do so runs the risk of an improperly sealed well, leading to potential well-to-well contamination during vortexing and evaporation during PCR.

- e. Vortex the plate at the highest setting speed for 10–30 seconds with medium pressure. Move the plate around to ensure equal contact on the vortex mixer platform.

**IMPORTANT!** Vortex for 10–30 seconds to ensure proper mixing. Failure to do so might result in false classification of samples.

- f. Centrifuge the reaction plate for 1–2 minutes at  $\geq 650 \times g$  ( $\geq 650$  RCF) to remove bubbles and to collect the liquid at the bottom of the reaction plate.

Table 5 Reaction plate volumes

Component	Volume per reaction		
	RNA Sample reaction	Positive Control reaction	Negative Control reaction
Reaction Mix	15.0 μL	15.0 μL	15.0 μL
Purified sample RNA (from RNA extraction)	5.0 μL	—	—
Positive Control (diluted TaqPath™ COVID-19 Control from step 3)	—	2.0 μL	—
Nuclease-free Water	—	3.0 μL	—
Purified Negative Control (from RNA extraction)	—	—	5.0 μL
<b>Total volume</b>	<b>20.0 μL</b>	<b>20.0 μL</b>	<b>20.0 μL</b>



# Perform RT-PCR using the Applied Biosystems™ 7500 Fast Dx Real-Time PCR Instrument

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■ Transfer the template (SDT) file for the 7500 Fast Dx Real-Time PCR Instrument .....	29
■ Set up and run the 7500 Fast Dx Real-Time PCR Instrument .....	30

## Dye calibration for the 7500 Real-Time PCR Instrument series

A maintained instrument will be calibrated for many dyes. In addition to those dyes, the instrument operator must calibrate the instrument for ABY™ dye and JUN™ dye that are used with this kit. For all other assays, refer to the standard calibration process.

## Transfer the template (SDT) file for the 7500 Fast Dx Real-Time PCR Instrument

The template (SDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which SDS Software v1.4.1 is installed.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument. Failure to do so can cause errors in the analysis.

---

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):  
`<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents`
2. Select the SDT file:  
`TaqPath COVID-19 Kit Template 7500fastDx sds1_4_1 v1-4.sdt`
3. Transfer the SDT file to the computer with SDS Software v1.4.1, using a USB drive or other method.

## Set up and run the 7500 Fast Dx Real-Time PCR Instrument

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. Using SDS Software v1.4.1, open the SDT file that you transferred in “Transfer the template (SDT) file for the 7500 Fast Dx Real-Time PCR Instrument” on page 29.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument. Failure to do so can cause errors in the analysis.

---

2. Confirm the run settings in the template and adjust as necessary.

- **Assay: Standard Curve (Absolute Quantitation)**
- **Run mode: Standard 7500**
- **Passive reference: None**
- **Sample volume: 25 µL**

---

**IMPORTANT!** The passive reference must be set to **None**.

---

3. Confirm that the reporter dye and the detector pairs are correct in the **Detector Manager** in the **Tools** menu.

Reporter dye	Detector
FAM	ORF1ab
VIC	N gene
ABY	S gene
JUN	MS2

4. Confirm that the targets above are assigned to each well in the plate layout.
5. Confirm the labeling of the control wells.
  - The template has one positive control and one negative control assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.
6. For wells with a positive control, confirm that **Task** is set to **Standard**.
7. For wells with a negative control, confirm that **Task** is set to **NTC**.
8. Edit the plate layout to assign a unique sample name to each well in the physical plate. For wells with a patient sample, confirm that **Task** is set to **Unknown** for all detectors.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---



9. Confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

10. Click **Save As**, enter a file name, then click **Save**.
11. Reopen the file to connect the computer to the instrument, load the plate, then start the run on the real-time PCR instrument.
12. After the instrument run is complete, open the SDS file in SDS Software v1.4.1. Analyze, then save the file.



# Perform RT-PCR using the Applied Biosystems™ 7500 Fast Real-Time PCR Instrument

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## Dye calibration for the 7500 Real-Time PCR Instrument series

A maintained instrument will be calibrated for many dyes. In addition to those dyes, the instrument operator must calibrate the instrument for ABY™ dye and JUN™ dye that are used with this kit. For all other assays, refer to the standard calibration process.

## Transfer the template (SDT or EDT) file for the 7500 Fast Real-Time PCR Instrument

The template (SDT or EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which instrument data collection software is installed.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and data collection software. Failure to do so can cause errors in the analysis.

---

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents

2. Select the correct SDT or EDT file for the version of the instrument software that you are using:

Data collection software version	Template file
SDS Software v1.5.1	TaqPath COVID-19 Kit Template 7500fast sds1_5_1 v1-4.sdt
7500 Software v2.3	TaqPath COVID-19 Kit Template 7500fast sds2_3 v1-2.edt

3. Transfer the appropriate SDT or EDT file to the computer with your data collection software, using a USB drive or other method.

## Set up and run the 7500 Fast Real-Time PCR Instrument (SDS Software v1.5.1)

This procedure is specific for the 7500 Fast Real-Time PCR Instrument using SDS Software v1.5.1.

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. Using SDS Software v1.5.1, access the appropriate template file.
  - a. Create a new experiment.
  - b. In the **Template** field, browse to, then open the SDT file that you transferred in “Transfer the template (SDT or EDT) file for the 7500 Fast Real-Time PCR Instrument” on page 33.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and data collection software. Failure to do so can cause errors in the analysis.

---

2. Confirm the run settings in the template and adjust as necessary.

- **Assay: Standard Curve (Absolute Quantitation)**
- **Run mode: Standard 7500**
- **Passive reference: None**
- **Sample volume: 25 µL**

---

**IMPORTANT!** The passive reference must be set to **None**.

---

3. Confirm that the reporter dye and the detector pairs are correct in the **Detector Manager** in the **Tools** menu.

Reporter dye	Detector
FAM	ORF1ab
VIC	N gene
ABY	S gene
JUN	MS2

4. Confirm that the targets above are assigned to each well in the plate layout.
5. Confirm the labeling of the control wells.
- The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.
6. For wells with a positive control, confirm that **Task** is set to **Standard**.
7. For wells with a negative control, confirm that **Task** is set to **NTC**.
8. Edit the plate layout to assign a unique sample name to each well in the physical plate.  
For wells with a patient sample, ensure that **Task** is set to **Unknown** for all detectors.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

9. Confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

10. Click **Save As**, enter a file name, then click **Save**.

11. Reopen the file, load the plate, then start the run on the instrument.
12. After the instrument run is complete, open the SDS file in SDS Software v1.5.1. Analyze, then save the file.

## Set up and run the 7500 Fast Real-Time PCR Instrument (7500 Software v2.3)

This procedure is specific for the 7500 Fast Real-Time PCR Instrument using SDS Software v2.3.

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. In the 7500 Software v2.3 home page, click **Template**.
2. Browse to, then open the EDT file that you transferred in “Transfer the template (SDT or EDT) file for the 7500 Fast Real-Time PCR Instrument” on page 33.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and data collection software. Failure to do so can cause errors in the analysis.

---

3. In the **Experiment Properties** window, enter or confirm the following information:
  - **Experiment name:** Enter a unique name
  - **Instrument type:** 7500 Fast (96 wells)
  - **Type of experiment:** Quantitation - Standard Curve
  - **Reagents:** TaqMan™
  - **Ramp Speed:** Standard
4. In the **Plate Setup** window, in the **Define Targets and Samples** tab and the **Define Targets** pane, confirm that the targets, reporter dyes, and quenchers are listed correctly.

Target	Reporter dye	Quencher
ORF1ab	FAM	None
N gene	VIC	None
S gene	ABY	None
MS2	JUN	None

5. In the **Plate Setup** window, in the **Define Targets and Samples** tab and the **Define Samples** pane, confirm the labeling of the control wells.
  - The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.
  - To include additional controls, select **Add New Sample**.



6. Select **Add New Sample** to assign a unique sample name to each well in the physical plate.
7. In the **Plate Setup** window, in the **Assign Targets and Samples** tab, confirm that four targets are assigned to each well in the plate layout. To designate a target or sample to a well, select the well, then check the **Assign** checkbox.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

8. For wells with a positive control, confirm that **Task** is set to **S** for Standard.
9. For wells with a negative control, confirm that **Task** is set to **N** for Negative.
10. For wells with a patient sample, confirm that **Task** is set to **U** for Unknown.
11. Confirm that the **Passive Reference** is set to **None**.
12. In the **Run Method** window, confirm that the **Reaction Volume Per Well** is 25 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

13. Select **Start Run**, enter a file name, then click **Save**.
14. After the instrument run is complete, click **Analyze**, then save the file.



# Perform RT-PCR using the Applied Biosystems™ 7500 Real-Time PCR Instrument

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## Dye calibration for the 7500 Real-Time PCR Instrument series

A maintained instrument will be calibrated for many dyes. In addition to those dyes, the instrument operator must calibrate the instrument for ABY™ dye and JUN™ dye that are used with this kit. For all other assays, refer to the standard calibration process.

---

**IMPORTANT!** Use only the calibration plates listed in “Required materials not supplied” on page 9.

---

## Transfer the template (EDT) file for the 7500 Real-Time PCR Instrument

The template (EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which 7500 Software v2.3 is installed.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument. Failure to do so can cause errors in the analysis.

---

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

```
<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents
```

2. Select the EDT file:

```
TaqPath COVID-19 Kit Template 7500std sds2_3 v1-2.edt
```

3. Transfer the EDT file to the computer with your data collection software, using a USB drive or other method.

## Set up and run the 7500 Real-Time PCR Instrument

This procedure is specific for the 7500 Real-Time PCR Instrument using 7500 Software v2.3.

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. In the 7500 Software v2.3 home page, click **Template**.
2. Browse to, then open the template file that you transferred in “Transfer the template (EDT) file for the 7500 Real-Time PCR Instrument” on page 38.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument. Failure to do so can cause errors in the analysis.

---

3. In the **Experiment Properties** window, enter or confirm the following information:
  - **Experiment name:** Enter a unique name
  - **Instrument type:** 7500 (96 wells)
  - **Type of experiment:** Quantitation - Standard Curve
  - **Reagents:** TaqMan™
  - **Ramp Speed:** Standard

4. In the **Plate Setup** window, in the **Define Targets and Samples** tab and the **Define Targets** pane, confirm that the targets, reporter dyes, and quenchers are listed correctly.

Target	Reporter dye	Quencher
ORF1ab	FAM	None
N gene	VIC	None
S gene	ABY	None
MS2	JUN	None

5. In the **Plate Setup** window, in the **Define Targets and Samples** tab and the **Define Samples** pane, confirm the labeling of the control wells.
- The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.

To include additional controls, select **Add New Sample**.

6. Select **Add New Sample** to assign a unique sample name to each well in the physical plate.
7. In the **Plate Setup** window, in the **Assign Targets and Samples** tab, confirm that four targets are assigned to each well in the plate layout. To designate a target or sample to a well, select the well, then check the **Assign** checkbox.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

8. For wells with a positive control, confirm that **Task** is set to **S** for Standard.
9. For wells with a negative control, confirm that **Task** is set to **N** for Negative.
10. For wells with a patient sample, confirm that **Task** is set to **U** for Unknown.
11. Confirm that the **Passive Reference** is set to **None**.
12. In the **Run Method** window, confirm that the **Reaction Volume Per Well** is 25 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

13. Select **Start Run**, enter a file name, then click **Save**.
14. After the instrument run is complete, click **Analyze**, then save the file.



# Perform RT-PCR using the Applied Biosystems™ QuantStudio™ 5 Real-Time PCR Instrument

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■ Transfer the template (EDT) file for the QuantStudio™ 5 Real-Time PCR Instrument . . . . .	41
■ Set up and run the QuantStudio™ 5 Real-Time PCR Instrument (96-well plates) . . . . .	41
■ Set up and run the QuantStudio™ 5 Real-Time PCR Instrument (384-well plates) . . . . .	43

## Dye calibration for the QuantStudio™ 5 Real-Time PCR Instrument

A maintained instrument will be calibrated for all dyes that are used with this kit. Ensure that the calibrations for FAM™ dye, VIC™ dye, ABY™ dye, and JUN™ dye are current. If calibration is required, refer to the standard calibration process in the instrument user guide.



## Transfer the template (EDT) file for the QuantStudio™ 5 Real-Time PCR Instrument

The template (EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which QuantStudio™ Design and Analysis Desktop Software v1.5.1 is installed.

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and block type. Failure to do so can cause errors in the analysis.

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents

2. Select the correct EDT file for your instrument.

Instrument	Template file
QuantStudio™ 5 Real-Time PCR Instrument (96-well, 0.1-mL block)	TaqPath COVID-19 Kit Template QS5 0_1ml_da1_5_1 v2-2.edt
QuantStudio™ 5 Real-Time PCR Instrument (96-well, 0.2-mL block)	TaqPath COVID-19 Kit Template QS5 0_2ml_da1_5_1 v2-2.edt
QuantStudio™ 5 Real-Time PCR Instrument (384-well block)	TaqPath COVID-19 Kit Template QS5 384_da1_5_1 v2-2.edt

3. Transfer the EDT file to the computer with QuantStudio™ Design and Analysis Desktop Software v1.5.1, using a USB drive or other method.

## Set up and run the QuantStudio™ 5 Real-Time PCR Instrument (96-well plates)

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. In the QuantStudio™ Design and Analysis Desktop Software v1.5.1, in the **New Experiment** box, select **Create New Experiment ▶ Template**.
2. Browse to, then open the EDT file that you transferred in “Transfer the template (EDT) file for the QuantStudio™ 5 Real-Time PCR Instrument” on page 41.

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and block type. Failure to do so can cause errors in the analysis.

3. In the **Properties** tab, enter or confirm the following.

- **Name:** Enter a unique name
- **Instrument type:** QuantStudio™ 5 System
- **Block type:** 96-Well 0.2-mL Block or 96-Well 0.1-mL Block
- **Experiment type:** Standard Curve
- **Chemistry:** TaqMan™ Reagents
- **Run Mode:** Standard

4. In the **Method** tab, confirm that the **Volume** is 25 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

5. In the **Plate** tab, click **Quick Setup**.

6. In the **Plate Attributes** pane, confirm that the **Passive Reference** is set to **None**.

7. In the **Plate** tab, click **Advanced Setup**.

8. In the **Targets** table, confirm that the reporter dye and the target pairs are correct.

Reporter dye	Detector	Quencher
FAM	ORF1ab	None
VIC	N gene	None
ABY	S gene	None
JUN	MS2	None

9. Confirm that the targets above are assigned to each well in the plate layout.

10. In the plate layout pane, confirm the labeling of the control wells.

- The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
- Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.

11. For all targets in the positive control well, confirm that **Task** is set to **S (Standard)**.

12. For all targets in the negative control well, confirm that **Task** is set to **N (Negative Control)**.

13. In the **Samples** table, click **Add** to define the sample names. Create a unique sample name for each well in the physical plate.

14. To assign a sample to a well, select the well in the plate layout, then select the sample from the **Samples** table.

For all targets in the patient sample wells, confirm that **Task** is set to **U (Unknown)**.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

15. In the **Run** tab, click **Start Run**, then select your instrument from the drop-down list.
16. Enter a file name in the dialog box that prompts you to save the run file, then save the file.

## Set up and run the QuantStudio™ 5 Real-Time PCR Instrument (384-well plates)

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. In the QuantStudio™ Design and Analysis Desktop Software v1.5.1, in the **New Experiment** box, select **Create New Experiment ▶ Template**.
2. Browse to, then open the EDT file that you transferred in “Transfer the template (EDT) file for the QuantStudio™ 5 Real-Time PCR Instrument” on page 41.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and block type. Failure to do so can cause errors in the analysis.

---

3. In the **Properties** tab, enter or confirm the following.

- **Name:** Enter a name
- **Instrument type:** QuantStudio™ 5 System
- **Block type:** 384-well Block
- **Experiment type:** Standard Curve
- **Chemistry:** TaqMan™ Reagents
- **Run Mode:** Standard

4. In the **Method** tab, confirm that the **Volume** is 20 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

5. In the **Plate** tab, click **Quick Setup**.
6. In the **Plate Attributes** pane, confirm that the **Passive Reference** is set to **None**.

7. In the **Plate** tab, click **Advanced Setup**.

8. In the **Targets** table, confirm that the reporter dye and the target pairs are correct.

Reporter dye	Detector	Quencher
FAM	ORF1ab	None
VIC	N gene	None
ABY	S gene	None
JUN	MS2	None

9. Confirm that the targets above are assigned to each well in the plate layout.

10. In the plate layout pane, confirm the labeling of the control wells.

- The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
- Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.

---

**Note:** If samples from more than one RNA extraction run are being included on the same RT-PCR 384-well plate, then there must be one negative control for each RNA extraction run included on the RT-PCR 384-well plate (see “Guidelines for RT-PCR” on page 20). Label each negative control with a unique name, for example, **NC1**, **NC2**, **NC3**, and **NC4**.

---

11. For all targets in the positive control well, confirm that **Task** is set to **S (Standard)**.

12. For all targets in the negative control well, confirm that **Task** is set to **N (Negative Control)**.

13. In the **Samples** table, click **Add** to define the names. Create a unique sample name for each well in the physical plate.

The template has one positive control and one negative control assigned to wells for reference. If additional control wells are required, each control well must have a unique name.

14. To assign a sample to a well, select the well in the plate layout, then select the sample from the **Samples** table.

For all targets in the patient sample wells, confirm that **Task** is set to **U (Unknown)**.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

15. In the **Run** tab, click **Start Run**, then select your instrument from the drop-down list.

16. Enter a file name in the dialog box that prompts you to save the run file, then save the file.



# Perform RT-PCR using the Applied Biosystems™ QuantStudio™ 5 Dx Real-Time PCR Instrument

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## Dye calibration for the QuantStudio™ 5 Dx Real-Time PCR Instrument

A maintained instrument will be calibrated for all dyes that are used with this kit. Ensure that the calibrations for FAM™ dye, VIC™ dye, ABY™ dye, and JUN™ dye are current. For all other assays, refer to the standard calibration process.



## QuantStudio™ 5 Dx TD Software

Follow the procedures in this section if you are using the QuantStudio™ 5 Dx TD Software.

If you are using QuantStudio™ 5 Dx IVD Software, see “QuantStudio™ 5 Dx IVD Software” on page 49.

### Transfer the template (EDT) file for the QuantStudio™ 5 Dx Real-Time PCR Instrument (QuantStudio™ 5 Dx TD Software)

The template (EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which QuantStudio™ 5 Dx TD Software is installed.

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

```
<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents
```

2. Select the EDT file:

```
TaqPath COVID-19 Kit Template QS5 Dx_da1_0_2 v2-2.edt
```

3. Transfer the EDT file to the computer with the QuantStudio™ 5 Dx TD Software, using a USB drive or other method.

---

**IMPORTANT!** Be careful to select the appropriate template file for the instrument and software version that you are using. Failure to do so can cause errors in the analysis.

---

### Set up and run the QuantStudio™ 5 Dx Real-Time PCR Instrument (QuantStudio™ 5 Dx TD Software)

For more information about the QuantStudio™ 5 Dx Real-Time PCR Instrument, see the documents listed in “Related documentation” on page 67.

1. In the QuantStudio™ 5 Dx TD Software, in the **New Experiment** box, select **Create New Experiment ▶ Template**.
2. Browse to, then open the EDT file that you transferred in “Transfer the template (EDT) file for the QuantStudio™ 5 Dx Real-Time PCR Instrument (QuantStudio™ 5 Dx TD Software)” on page 46.

---

**IMPORTANT!** Be careful to select the appropriate template file for the instrument and block type. Failure to do so can cause errors in the analysis.

---

3. In the **Properties** tab, enter or confirm the following.

- **Name:** Enter a unique name
- **Instrument type:** QuantStudio™ 5 Dx System
- **Block type:** 96-Well 0.2-mL Block
- **Experiment type:** Standard Curve
- **Chemistry:** TaqMan™ Reagents
- **Run Mode:** Standard

4. In the **Method** tab, confirm that **Volume** is 25 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

5. In the **Plate** tab, click **Quick Setup**.
6. In the **Plate Attributes** pane, confirm that the **Passive Reference** is set to **None**.
7. In the **Plate** tab, click **Advanced Setup**.
8. In the **Targets** table, confirm that the reporter dye and the target pairs are correct.

Reporter dye	Detector	Quencher
FAM	ORF1ab	None
VIC	N gene	None
ABY	S gene	None
JUN	MS2	None

9. Confirm that the targets above are assigned to each well in the plate layout.
10. In the plate layout pane, confirm the labeling of the control wells.
- The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.
11. For all targets in the positive control well, confirm that **Task** is set to **S (Standard)**.
12. For all targets in the negative control well, confirm that **Task** is set to **N (Negative Control)**.
13. In the **Samples** table, click **Add** to define the sample names. Create a unique sample name for each well in the physical plate.
14. To assign a sample to a well, select the well in the plate layout, then select the sample from the **Samples** table.
- For all targets in the patient sample wells, confirm that **Task** is set to **U (Unknown)**.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

15. In the **Run** tab, click **Start Run**, then select your instrument from the drop-down list.
16. Enter a file name in the dialog box that prompts you to save the run file, then save the file.

## QuantStudio™ 5 Dx IVD Software

Follow the procedures in this section if you are using the QuantStudio™ 5 Dx IVD Software.

If you are using QuantStudio™ 5 Dx TD Software, see “QuantStudio™ 5 Dx TD Software” on page 46.

### Transfer the template (EDT) file for the QuantStudio™ 5 Dx Real-Time PCR Instrument (QuantStudio™ 5 Dx IVD Software)

The template (EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which QuantStudio™ 5 Dx IVD Software is installed.

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

```
<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents
```

2. Select the EDT file:

```
TaqPath COVID-19 Kit Template QS5 Dx_da1_0_2_CE_IVD v2-2.edt
```

3. Transfer the EDT file to the computer with the QuantStudio™ 5 Dx IVD Software, using a USB drive or other method.

---

**IMPORTANT!** Be careful to select the appropriate template file for the instrument and software version that you are using. Failure to do so can cause errors in the analysis.

---

The template must be installed in the QuantStudio™ 5 Dx IVD Software before the run is started. See “Install the template file in the QuantStudio™ 5 Dx IVD Software” on page 49.

### Install the template file in the QuantStudio™ 5 Dx IVD Software

To install a template, the logged-in user must have the SAE permission of **Manage Installed Templates**. For information about SAE permissions, see the *QuantStudio™ 5 Dx TD Software User Guide* (Pub. No. 100049554).

1. Open the QuantStudio™ 5 Dx IVD Software.
2. When prompted, log in with a user account with the appropriate permissions.
3. In the menu bar, select **Tools ▶ Template Menu**.
4. Click **Install**, then click **Yes** to confirm the **Template Installation Agreement**.
5. Navigate template file that was transferred, then click **Open**.  
The template is now installed and accessible in the **Template Menu**.
6. Click **Close**.

## Set up and run the QuantStudio™ 5 Dx Real-Time PCR Instrument (QuantStudio™ 5 Dx IVD Software)

For more information about the QuantStudio™ 5 Dx Real-Time PCR Instrument, see the documents listed in “Related documentation” on page 67.

---

**IMPORTANT!** When the QuantStudio™ 5 Dx IVD Software is used, the positive control must be placed in well A12 and the negative control must be placed in well A1 on the physical plate.

---

1. In the QuantStudio™ 5 Dx IVD Software, in the **New Experiment** box, select **Experiment Setup**.
2. Select the template file that you installed in “Install the template file in the QuantStudio™ 5 Dx IVD Software” on page 49.
3. Click **Create New Experiment**.
4. In **Samples** table, click **Add** to define the sample names. Create a unique sample name for each well in the physical plate.
5. To assign a sample to a well, select the well in the plate layout, then select sample from the **Samples** table.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

6. In the **Run** tab, click **Start Run**, then select your instrument from the drop-down list. The **Enter Reason for Change** dialog box will appear.
7. In the **Enter Reason for Change** dialog box, click **OK**.
8. Enter a file name in the dialog box that prompts you to save the run file, then save the file.





# Perform RT-PCR using the Applied Biosystems™ QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block)

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■ Set up and run the QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block) . . . . .	52

## Dye calibration for the QuantStudio™ 7 Flex Real-Time PCR Instrument

A maintained instrument will be calibrated for many dyes. In addition to those dyes, the instrument operator must calibrate the instrument for ABY™ dye and JUN™ dye that are used with this kit. For all other assays, refer to the standard calibration process.

## Transfer the template (EDT) file for the QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block)

The template (EDT) file contains the settings for the instrument run. It is installed on the computer with Applied Biosystems™ COVID-19 Interpretive Software, and must be transferred via a USB drive or other method to the computer on which the QuantStudio™ Real-Time PCR Software v1.3 is installed.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and block type. Failure to do so can cause errors in the analysis.

---

1. On the computer with Applied Biosystems™ COVID-19 Interpretive Software, navigate to the following directory (where <...> is the installation directory):

```
<...>\Applied Biosystems\COVID-19 Interpretive Software\Client\docs\User Documents
```

2. Select the EDT file:

```
TaqPath COVID-19 Kit Template QS7 384 1_3 v2-2.edt
```

3. Transfer the EDT file to the computer with QuantStudio™ Real-Time PCR Software v1.3, using a USB drive or other method.

## Set up and run the QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block)

For more information about the instrument, see the documents listed in “Related documentation” on page 67.

1. In the QuantStudio™ Real-Time PCR Software v1.3 home screen, click **Template**.
2. Browse to, then open the EDT file that you transferred in “Transfer the template (EDT) file for the QuantStudio™ 7 Flex Real-Time PCR Instrument (384-well block)” on page 52.

---

**IMPORTANT!** Be careful to select the appropriate template file for your instrument and block type. Failure to do so can cause errors in the analysis.

---

3. In the **Experiment Properties** tab, enter or confirm the following.
  - **Experiment Name:** Enter a unique name
  - **Instrument type:** QuantStudio™ 7 Flex System
  - **Block:** 384-well
  - **Type of Experiment:** Standard Curve
  - **Reagents:** TaqMan™
  - **Properties:** Standard

4. In the **Define** tab, in the **Targets** pane, confirm that the targets, reporter dyes, and quenchers are listed correctly.

Target	Reporter dye	Quencher
ORF1ab	FAM	None
N gene	VIC	None
S gene	ABY	None
MS2	JUN	None

5. In the **Define** tab, in the **Samples** pane, define a unique sample name for each well in the physical plate.

---

**Note:** Wells that do not have a sample name will not be analyzed by the software.

---

6. In the **Define** tab, confirm that the **Passive Reference** is set to **None**.
7. In the **Assign** tab, confirm that four targets are assigned to each well in the plate layout.  
To assign a target to a well, select the well, then check the **Assign** checkbox.
8. In the **Assign** tab, in the **Samples** pane, confirm the labeling of the control wells.
  - The template has one positive control (PC) and one negative control (NC) assigned to wells for reference.
  - Move the control well assignments by copying the existing control wells and pasting them according to their location on the physical plate.

---

**Note:** If the 384-well plate includes additional negative controls (from combined extraction runs), define each additional negative control and assign it to a well to match the physical plate. Give each negative control a unique name (for example, **NC1**, **NC2**, **NC3**, and **NC4**).

---

9. In the **Assign** tab, confirm the **Task** assignments.
  - For wells with a Positive Control (PC), confirm that the **Task** is set to **S** for Standard for all of the targets.
  - For wells with a Negative Control (NC), confirm that the **Task** is set to **N** for Negative for all of the targets.
  - For the wells with a patient sample, confirm that the **Task** is set to **U** for Unknown for all of the targets.
10. In the **Assign** tab, assign a sample name to each well to match the physical plate.  
To assign a sample to a well, select the well, then check the **Assign** checkbox.

11. In the **Run Method** tab, confirm that the **Reaction Volume Per Well** is 20 µL, then confirm the thermal protocol.

Step	Temperature	Time	Number of cycles
UNG incubation	25°C	2 minutes	1
Reverse transcription	53°C	10 minutes	1
Activation	95°C	2 minutes	1
Denaturation	95°C	3 seconds	40
Anneal / extension	60°C	30 seconds	

12. In the **Run** tab, click **Start Run**, then select your instrument from the drop-down list.
13. Enter a file name in the dialog box that prompts you to save the run file, then save the file.



# Analysis and results

## Obtain the Applied Biosystems™ COVID-19 Interpretive Software

To perform data analysis and results interpretation, you must use the Applied Biosystems™ COVID-19 Interpretive Software.

To obtain the software, contact your local instrument service team. Go to <https://www.thermofisher.com/contactus>.

## Analyze the data

For detailed instructions about using the software, click the **Help** menu in the COVID-19 Interpretive Software.

1. Using a USB drive or other method, transfer the SDS or EDS files from the computer with the data collection software to the computer with the COVID-19 Interpretive Software.
2. Sign in to the COVID-19 Interpretive Software.
3. In the **Home** screen, click the **Import Samples** button.
4. Select the SDS files or the EDS files to import, then click **Open**.  
After import, the software analyzes the run data, performs Quality Check (QC) analysis, and calculates the interpretive results for each sample and control.
5. In the **Home** screen, under **Batches**, click the **<Batch ID>** link for the batch of interest to display the **Batch Details** screen.
  - In the **Batch Details** screen, view the status and result for each sample in the **Sample Information** tab.
  - **Optional:** To identify signs of inadequate vortexing or centrifugation, select the **Amplification Plot** tab to view the amplification curve for each sample.
  - **Optional:** To enter a comment for the sample, select the **Amplification Plot** tab, select the **Comment** tab, enter a comment, then click **Add**.  
The comment will appear in all exports (CSV files) and reports (PDF files). It will include the user name and date.



6. To generate a Batch Export (CSV file), return to the **Home** screen, select the checkbox for the batch, then click **Export Batch** at the top of the **Home** screen. Click **Open folder location** in the dialog box to locate and open the CSV file.
7. To generate a Batch Report (PDF file), select the checkbox for the batch, then click **Report Batch** at the top of the **Home** screen. Click **Open folder location** in the dialog box to locate and open the PDF file.

## Interpretation of the results

Interpretation of the results is performed by the Applied Biosystems™ COVID-19 Interpretive Software. For information about the  $C_t$  values that are used by the software to interpret results, see Appendix A, “Ct cutoff values for assay targets”.

### Quality control and validity of results

A minimum of one Negative Control and one Positive Control must be present for each run for the COVID-19 assay.

Additional Negative Control wells must be run for each extraction that is represented on a real-time RT-PCR plate. All control wells must pass for the real-time RT-PCR plate to be considered valid.

Validation of results is performed automatically by the Applied Biosystems™ COVID-19 Interpretive Software based on performance of the Positive and Negative Controls.

**Table 6 Patient samples**

ORF1ab	N gene	S gene	MS2	Status	Result	Action
NEG	NEG	NEG	NEG	INVALID	NA	Repeat test by re-extracting the original sample and repeating the RT-PCR. If the repeat result remains invalid, consider collecting a new specimen.
NEG	NEG	NEG	POS	VALID	SARS-CoV-2 Not Detected	Report results to the healthcare provider and appropriate public health authorities. Consider testing for other viruses.
Only one SARS-CoV-2 target = POS			POS or NEG	VALID	SARS-CoV-2 Inconclusive	<ol style="list-style-type: none"> <li>1. Repeat test by re-extracting the original sample and repeating the RT-PCR.</li> <li>2. After retesting one time, report results to the healthcare provider and appropriate public health authorities.</li> </ol> <p><b>IMPORTANT!</b> Samples with a result of SARS-CoV-2 Inconclusive shall be retested one time.</p> <p>If the repeat result remains inconclusive, the healthcare provider should conduct additional confirmation testing with a new specimen, if clinically indicated.</p>
Two or more SARS-CoV-2 targets = POS			POS or NEG	VALID	Positive SARS-CoV-2	Report results to the healthcare provider and appropriate public health authorities.

## Performance characteristics

The analytical and clinical performance of the TaqPath™ COVID-19 CE-IVD RT-PCR Kit was evaluated by determining limit of detection (LoD), characterizing the impact of interfering substances and cross-reactivity, as described in the following sections.

### Limit of detection (LoD)

The LoD study established the lowest SARS-CoV-2 viral concentration (Genomic Copy Equivalents or GCE) that can be detected by the TaqPath™ COVID-19 CE-IVD RT-PCR Kit in a particular specimen type at least 95% of the time. Banked Nasopharyngeal swab (NP) and Bronchoalveolar lavage (BAL) samples were obtained from patients in the United States in the years 2015–2019. The NP and BAL samples were pooled, respectively, and spiked with purified SARS-CoV-2 viral genomic RNA at several concentrations, then processed using the kit workflow. A three-phase approach was used to determine the LoD for each specimen type. In phases I and II, the preliminary LoD was established and confirmed in phase III by testing 20 replicates.

Table 7 LoD determination in BAL

Effective Concentration	Replicate	Mean C <sub>t</sub>				Interpretation	% Positive
		ORF1ab	N	S	MS2		
10 GCE/ reaction	1	29.9	29.1	28.5	23.1	Positive	100%
	2	30.1	29.3	29.7	24.0	Positive	
	3	30.0	29.7	29.3	24.0	Positive	
	4	30.3	29.7	29.1	23.8	Positive	
	5	30.2	29.6	29.6	23.7	Positive	
	6	30.3	29.3	29.7	23.5	Positive	
	7	29.9	29.6	32.8	23.4	Positive	
	8	30.2	29.8	29.2	23.8	Positive	
	9	30.1	29.4	28.6	23.8	Positive	
	10	30.1	29.4	29.1	24.0	Positive	
	11	29.8	29.5	29.4	24.3	Positive	
	12	30.1	29.7	29.1	24.6	Positive	
	13	30.7	30.1	28.4	25.1	Positive	

Table 7 LoD determination in BAL (continued)

Effective Concentration	Replicate	Mean C <sub>t</sub>				Interpretation	% Positive
		ORF1ab	N	S	MS2		
10 GCE/ reaction	14	30.4	29.8	29.1	24.8	Positive	100%
	15	30.2	29.8	29.7	24.9	Positive	
	16	30.3	29.8	29.4	24.6	Positive	
	17	30.4	30.0	31.5	24.7	Positive	
	18	30.4	30.1	29.3	24.9	Positive	
	19	30.9	29.7	29.2	25.4	Positive	
	20	30.3	29.9	29.4	25.7	Positive	

Table 8 LoD determination in Nasopharyngeal specimens

Effective Concentration	Replicate	Mean C <sub>t</sub>				Interpretation	% Positive
		ORF1ab	N	S	MS2		
10 GCE/ reaction	1	30.0	28.9	35.7	25.7	Positive	100%
	2	30.6	28.9	33.6	25.8	Positive	
	3	30.2	28.8	32.0	25.8	Positive	
	4	30.4	28.7	34.2	25.7	Positive	
	5	30.5	29.0	31.4	25.8	Positive	
	6	31.0	29.3	36.6	26.0	Positive	
	7	30.3	29.2	31.1	25.8	Positive	
	8	31.1	29.2	31.8	26.5	Positive	
	9	30.5	28.9	33.0	26.2	Positive	
	10	30.3	28.8	34.7	26.8	Positive	
	11	30.5	29.8	38.7	27.4	Positive	
	12	31.6	29.7	35.0	27.6	Positive	
	13	30.7	29.3	36.4	27.4	Positive	
	14	31.6	28.8	31.3	27.2	Positive	
	15	31.0	29.3	36.0	27.0	Positive	
	16	30.5	29.1	35.7	27.0	Positive	
	17	30.7	29.4	34.8	27.4	Positive	

Table 8 LoD determination in Nasopharyngeal specimens (continued)

Effective Concentration	Replicate	Mean C <sub>t</sub>				Interpretation	% Positive
		ORF1ab	N	S	MS2		
10 GCE/ reaction	18	30.7	29.3	34.6	27.5	Positive	100%
	19	31.0	29.3	35.9	28.7	Positive	
	20	30.4	29.2	32.7	28.4	Positive	

Table 9 LoD results

LoD studies were performed by extracting 400 µL of each specimen followed by elution in 50 µL, then 5 µL of eluate was added to the RT-PCR reaction. The LoD of 10 GCE/reaction is calculated from a starting concentration of 250 GCE/mL of specimen.

Specimen type	Limit of Detection (GCE/reaction)
Bronchoalveolar lavage	10 GCE/reaction
Nasopharyngeal swab	10 GCE/reaction

## Reactivity (Inclusivity)

*In silico* analysis was updated on January 04, 2021 using 309,591 sequenced genomes in GISAID and NCBI GenBank databases which include instances of emerging SARS-CoV-2 variants that are under global surveillance. Based on the BLAST analysis, the TaqPath™ COVID-19 CE-IVD RT-PCR Kit maps with 100% homology to 96.2% of known SARS-CoV-2 strains/isolates in GISAID and 99.8% of known strains/isolates in NCBI GenBank. Mapping was deemed successful for a given isolate if at least two of the three target assays (ORF1ab, S gene, and N gene) showed 100% identity.

## Interfering substances

Pooled SARS-CoV-2-negative nasopharyngeal swab and bronchoalveolar lavage specimens were spiked with purified SARS-CoV-2 viral RNA at 3X the Limit of Detection (30 GCE/reaction) and potential interfering substances at the concentrations above. Each substance was tested with triplicate extractions. The results are presented in Table 10 on page 61.

Pooled SARS-CoV-2-negative nasopharyngeal swab and bronchoalveolar lavage specimens were spiked with potential interfering substances at the concentrations above. Each substance was tested with triplicate extractions. No false positive results were observed for any of the substances at the concentrations tested.



Table 10 Interfering substances

Interfering substance	Final concentration in sample	Agreement with expected results			
		Positive BAL samples	Positive NP samples	Negative BAL samples	Negative NP samples
None	N/A	100% <sup>[1]</sup>	100%	100%	100%
Mucin: bovine submaxillary gland, type I-S	0.1 mg/mL	100% <sup>[2]</sup>	100%	100%	100%
Blood (human)	1% v/v	100% <sup>[3]</sup>	100%	100%	100%
Nasal sprays or drops—Nasacort™	10% v/v	100% <sup>[4]</sup>	100% <sup>[4]</sup>	100%	100%
Nasal corticosteroids—Dymista™	5 µg/mL	100% <sup>[2]</sup>	100%	100%	100%
NeilMed™ Nasogel™	1% w/v	100% <sup>[2]</sup>	100%	100%	100%
Influenza A H1N1 Brisbane/59/07	1 × 10 <sup>5</sup> TCID <sub>50</sub> /mL	100% <sup>[2]</sup>	100%	100%	100%
Throat lozenges, oral anesthetic and analgesic—Chloraseptic™	1% w/v	100% <sup>[3]</sup>	100%	100%	100%
Oseltamivir phosphate	33 µg/mL	100% <sup>[2]</sup>	100%	100%	100%
Antibiotic, nasal ointment—Bactroban™	5 µg/mL	100% <sup>[2]</sup>	100%	100%	100%
Antibacterial, systemic—Tobramycin	0.6 mg/mL	100% <sup>[2]</sup>	100%	100%	100%
Homeopathic allergy relief medicine—Similasan™ Nasal	10% v/v	100%	100%	100%	100%

<sup>[1]</sup> Two of six replicates produced a C<sub>t</sub> >37 or Undetermined for S Gene, but all replicates were called Positive based on the interpretation algorithm.

<sup>[2]</sup> Two of three replicates produced a C<sub>t</sub> >37 or Undetermined for S Gene, but all replicates were called Positive based on the interpretation algorithm.

<sup>[3]</sup> All three replicates produced a C<sub>t</sub> >37 or Undetermined for S Gene but were called Positive based on the interpretation algorithm.

<sup>[4]</sup> One of three replicates produced a C<sub>t</sub> >37 or Undetermined for S Gene, but all replicates were called Positive based on the interpretation algorithm.

## Cross-reactivity

*In silico* analysis of the following forty-three (43) organisms was performed.

**Table 11** Organisms used for *in silico* cross-reactivity analysis

Human coronavirus 229E	Rhinovirus/Enterovirus
Human coronavirus OC43	Parechovirus
Human coronavirus HKU1	<i>Candida albicans</i>
Human coronavirus NL63	<i>Corynebacterium diphtheriae</i>
SARS-coronavirus	<i>Legionella</i> (non-pneumophila)
MERS-coronavirus	<i>Bacillus anthracis</i> (Anthrax)
Adenovirus	<i>Moraxella catarrhalis</i>
Human Metapneumovirus (hMPV)	<i>Neisseria elongata</i> and <i>Neisseria meningitidis</i>
Parainfluenza 1	<i>Pseudomonas aeruginosa</i>
Parainfluenza 2	<i>Staphylococcus epidermidis</i>
Parainfluenza 3	<i>Streptococcus salivarius</i>
Parainfluenza 4	<i>Leptospira</i> sp.
Influenza A	<i>Chlamydomydia pneumoniae</i>
Influenza B	<i>Chlamydomydia psittaci</i>
Influenza C	<i>Coxiella burnetii</i> (Q-Fever)
Enterovirus	<i>Staphylococcus aureus</i>
Respiratory Syncytial Virus A	<i>Haemophilus influenzae</i>
Respiratory Syncytial Virus B	<i>Legionella pneumophila</i>
<i>Bordetella pertussis</i>	<i>Mycobacterium tuberculosis</i>
<i>Mycoplasma pneumoniae</i>	<i>Streptococcus pneumoniae</i>
<i>Pneumocystis jirovecii</i> (PJP)	<i>Streptococcus pyogenes</i>

Among the tested organisms, *Neisseria elongata* showed homology for the forward and reverse primers and probe for the N gene. The forward primer showed  $\geq 80\%$  homology while the reverse primer and probe showed 36% homology. The N gene reverse primer and probe show low homology, therefore the risk of the non-specific amplification is low.

Blast analysis showed  $\geq 80\%$  homology for one assay component (forward primer, reverse primer, or probe) for select isolates. Despite  $\geq 80\%$  homology of one assay component for select isolates, there is no anticipated amplification because hybridization of all three assay components are necessary to generate a signal. We also found multiple instances where different assay components had  $\geq 80\%$

homology to different isolates of the same species. For example, *Bacillus anthracis* strain AFS029987 had  $\geq 80\%$  homology to the ORF1ab forward primer while strain MCCC 1A01412 had  $\geq 80\%$  homology to the ORF1ab reverse primer. Since these are two different organisms, amplification is not likely to occur. The *in silico* analysis indicates that significant amplification of non-target sequences that result in cross-reactivity or potentially interfere with detection of SARS-CoV-2 is not likely to occur.

## Clinical evaluation

A clinical evaluation study was performed to evaluate the performance of the TaqPath™ COVID-19 CE-IVD RT-PCR Kit using nasopharyngeal swab (NP) and bronchoalveolar lavage (BAL) specimens.

A total of sixty (60) contrived positive specimens were tested:

- 30 contrived positive nasopharyngeal swab (NP) specimens
- 30 contrived positive bronchoalveolar lavage (BAL) specimens

Samples were contrived by spiking known concentrations of extracted SARS-CoV-2 viral genomic RNA, relative to the product LoD, into matrices which were determined to be negative by the TaqPath™ COVID-19 CE-IVD RT-PCR Kit prior to spiking in the RNA.

In addition to the contrived positive specimens, sixty (60) negative specimens were tested:

- 30 negative nasopharyngeal swab (NP) specimens
- 30 negative samples bronchoalveolar lavage (BAL) specimens
- All negative samples yielded negative results

Results for positive samples are shown in the tables below:

**Table 12 BAL Clinical Evaluation Study**

Final RNA Concentration in Sample	Number of Positives	Mean C <sub>t</sub>		
		S gene	ORF1ab	N gene
2X LoD	20/20 <sup>[1]</sup>	28.9	29.5	28.7
3X LoD	5/5 <sup>[1]</sup>	28.8	29.2	28.5
5X LoD	5/5	27.4	28.2	27.4

<sup>[1]</sup> Two samples initially gave inconclusive results and were retested. The results were positive after the retest. Mean C<sub>t</sub> values are calculated from the retest results.

Table 13 NP Clinical Evaluation Study

Final RNA Concentration in Sample	Number of Positives	Mean C <sub>t</sub>		
		S gene	ORF1ab	N gene
2X LoD	20/20 <sup>[1]</sup>	30.9	30.6	29.3
3X LoD	5/5	30.0	30.1	28.8
5X LoD	5/5	28.7	29.0	27.9

<sup>[1]</sup> One sample initially gave an inconclusive result and was retested. The result was positive after the retest. Mean C<sub>t</sub> values are calculated from the retest results.

## Clinical performance evaluation

An independent clinical study was performed by MVZ Labor Dr. Limbach & Kollegen GbR (Heidelberg, Germany), an ISO 15189 and ISO 17025 accredited clinical laboratory for the performance of molecular methods (genetic testing) and genome sequencing (DAkkS D-ML-13176-01-00), as well as authorized laboratory for COVID-19 diagnostic activities in Germany.

The study protocol was reviewed and approved by the Ethical Committee of the Baden-Württemberg State Medical Association, and executed in line with the Good Clinical Practices.

The study was conducted on retrospectively collected upper respiratory samples from routine leftover clinical specimen from patients of all ages, collected in Germany in February 2021. All samples had been characterized for SARS-CoV-2 presence/absence by the CE-IVD RT-PCR test from Roche (Roche cobas® SARS-CoV-2 Test).

A total of 450 clinical samples were tested in the study. 175 samples were previously characterized positive, and spanning the dynamic range of the assay C<sub>t</sub> values in equal proportions (range bins: C<sub>t</sub> <20, 20 ≤ C<sub>t</sub> <25, and C<sub>t</sub> ≥30), and 275 clinical samples were previously characterized negative. They were concurrently tested with the comparator and the TaqPath™ COVID-19 CE-IVD RT-PCR Kit, in a blinded and randomized study.

The Roche cobas® SARS-CoV-2 Test was used as the comparator.

NGS sequencing (Illumina® NGS sequencing instrument with EasySeq™ SARS-CoV-2 Whole Genome NGS Sequencing Kit) was used as the resolver for any discordant results between both CE-IVD RT-PCR tests.

### Concordance, Positive Percent Agreement (PPA), and Negative Percent Agreement (NPA):

Positive Percent Agreement (PPA) and Negative Percent Agreement (NPA) and the two-sided 95% Confidence Interval (CI) were calculated as follows:

$$\text{PPA} = 100\% \times (\text{Number of positives by both evaluation method and its comparator} / \text{Number of positives by comparator method})$$

$$\text{NPA} = 100\% \times (\text{Number of negatives by both evaluation method and its comparator} / \text{Number of negatives by comparator method})$$

The 95% *Confidence Interval* was determined using Clopper Pearson Method.

**Table 14** Concordance between the TaqPath™ COVID-19 CE-IVD RT-PCR Kit and the comparator

COVID-19	Comparator: Roche cobas® SARS-CoV-2 Test		
TaqPath™ COVID-19 Kit (CE-IVD)	Positive	Negative	Total
Positive	171	13	184
Negative	1	261	262
Total	172	274	446
Agreement Calculations			95% CI
Positive Percent Agreement (PPA)	171/172	99.4%	96.8% – 100.0%
Negative Percent Agreement (NPA)	261/274	95.3%	92.0% – 97.4%

Four samples with only one target gene as positive by cobas® SARS-CoV-2 Assay were deemed as “Inconclusive” per the study protocol and excluded from the agreement calculation.

The TaqPath™ COVID-19 test and the comparator had fourteen (14) discordant samples, amongst which eight (8) could not be resolved by sequencing due to low concentration of SARS-CoV-2-RNA in the specimens. The remaining six (6) discordant samples were resolved by sequencing, showing presence of SARS-CoV-2, in concordance with the TaqPath™ COVID-19 results.





# C<sub>t</sub> cutoff values for assay targets

The Applied Biosystems™ COVID-19 Interpretive Software uses the following C<sub>t</sub> cutoff values for assay targets during interpretation of the results.

**Table 15 COVID-19 Assay C<sub>t</sub> cutoff values**

Sample or Control	Target	C <sub>t</sub> cutoff
Positive Control	MS2	Valid C <sub>t</sub> values are >37
	Viral targets	Valid C <sub>t</sub> values are ≤37
Negative Control	MS2	Valid C <sub>t</sub> values are ≤32
	Viral targets	Valid C <sub>t</sub> values are >37
Clinical samples	MS2	Valid C <sub>t</sub> values are ≤32 <sup>[1]</sup>
	Viral targets	Positive C <sub>t</sub> values are ≤37

<sup>[1]</sup> If any of the viral targets is positive, the C<sub>t</sub> for MS2 can be >32.



# Documentation and support

## Related documentation

Document	Publication Number
<i>Applied Biosystems™ 7500 Fast Dx Real-Time PCR Instrument Reference Guide</i>	4406991
<i>Applied Biosystems™ 7300/7500/7500 Fast Real-Time PCR System Installation and Maintenance Guide</i>	4347828
<i>QuantStudio™ 3 and 5 Real-Time PCR Systems Installation, Use, and Maintenance Guide</i>	MAN0010407
<i>QuantStudio™ 5 Dx Real-Time PCR Instrument Maintenance and Administration User Guide</i>	100042186
<i>QuantStudio™ 5 Dx TD Software User Guide</i>	100049554
<i>QuantStudio™ 5 Dx IVD Software User Guide</i>	100049556
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems Maintenance and Administration Guide</i>	4489821
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems Quick Reference</i>	4489826
<i>QuantStudio™ Real-Time PCR Software Getting Started Guide</i>	4489822
<i>COVID-19 Interpretive Software CE-IVD Edition Installation Quick Reference</i>	MAN0019230
<i>TaqPath™ COVID-19 CE-IVD RT-PCR Kit with saliva Instructions for Use</i>	MAN0024936

## Customer and technical support

For additional documentation and information about this kit, visit:

<https://www.thermofisher.com/covid19ceivd>

For download instructions for the COVID-19 Interpretive Software, see “Obtain the Applied Biosystems™ COVID-19 Interpretive Software” on page 55.

Refer to the Read Me file provided with the COVID-19 Interpretive Software before contacting support for the software.

Visit: <https://www.thermofisher.com/contactus> for service and support information for this kit, including the following:

- Worldwide contact telephone numbers
- Product support information
- Order and web support
- Product documentation such as:
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

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**Note:** For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

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## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at [www.thermofisher.com/us/en/home/global/terms-and-conditions.html](http://www.thermofisher.com/us/en/home/global/terms-and-conditions.html). If you have any questions, please contact Life Technologies at [www.thermofisher.com/support](http://www.thermofisher.com/support).



# QuantStudio™ 3 and 5 Real-Time PCR Systems

## INSTALLATION, USE, AND MAINTENANCE

### Firmware v1.2.x

Publication Number MAN0010407

Revision C.0



For Research Use Only. Not for use in diagnostic procedures.

**ThermoFisher**  
SCIENTIFIC



The information in this guide is subject to change without notice.

## **DISCLAIMER**

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# About this guide

## Revision history

Revision	Date	Description
C.0	December 2015	Updates – describes new features in Firmware v1.2.x, including: <ul style="list-style-type: none"><li>• Updated workflow to create an instrument profile</li><li>• Streamlined workflow for connectivity to the Thermo Fisher Cloud</li><li>• Improved display of VeriFlex™ Zones</li><li>• Plate insert reminder before starting run</li><li>• Support for 96-well Fast (0.1 mL) plates</li></ul>
B.0	September 2015	Updates – describes new features in Firmware v1.1.x, including: <ul style="list-style-type: none"><li>• <b>Experiment runs:</b> monitor real-time data, edit cycle number and lock screen during a run, view end plot, and support for 384-well plates</li><li>• <b>File management:</b> access Network folders, navigate folder structures and save templates on instrument, and perform batch actions for file management</li><li>• <b>Instrument configuration:</b> support for Security, Audit, and e-Signature (SAE), smart monitoring, and choice of server region</li></ul> Includes information on software feature comparison, definitions of terms, parts of method, network connection options, experiment types, desktop software installation.
A.0	April 2015	New document. Describes installation, operation, and maintenance of the QuantStudio™ 3 and 5 Real-Time PCR Systems.

## Purpose

This guide provides information about installing, using, and maintaining the QuantStudio™ 3 and 5 Real-Time PCR Systems.

**Note:** For information and instructions on performing experiments on these systems, refer to the *QuantStudio™ Design and Analysis desktop Software User Guide* (Pub. no. MAN0010408).

# Product information

- Instrument hardware description ..... 10
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## Instrument hardware description

### Instrument overview

- The QuantStudio™ 3 and 5 Real-Time PCR Systems use fluorescent-based polymerase chain reaction (PCR) reagents to perform:
- Quantitative detection of target nucleic acid sequences (targets).
  - Qualitative detection of targets (endpoint analysis).
  - Qualitative analysis of the PCR product (post-PCR melt curve analysis).



The following fixed-block configurations are available:

QuantStudio™ 3 Real-Time PCR System	QuantStudio™ 5 Real-Time PCR System
<ul style="list-style-type: none"> <li>• 96-Well VeriFlex™ 0.2-mL Block (4 Color)</li> <li>• 96-Well VeriFlex™ 0.1-mL Block (4 Color)</li> </ul>	<ul style="list-style-type: none"> <li>• 96-Well VeriFlex™ 0.2-mL Block (6 Color De-coupled)</li> <li>• 384-Well Block (5 Color)</li> <li>• 96-Well VeriFlex™ 0.1-mL Block (6 Color De-coupled)</li> </ul>

The instrument can be run directly from the touchscreen to create and start experiments. To design experiments or to analyze data, the instrument can be integrated with QuantStudio™ Design and Analysis Software (desktop or cloud).

An optional barcode scanner and optional wireless adapter can be purchased separately.

## Instrument filters and supported dyes

### System dyes

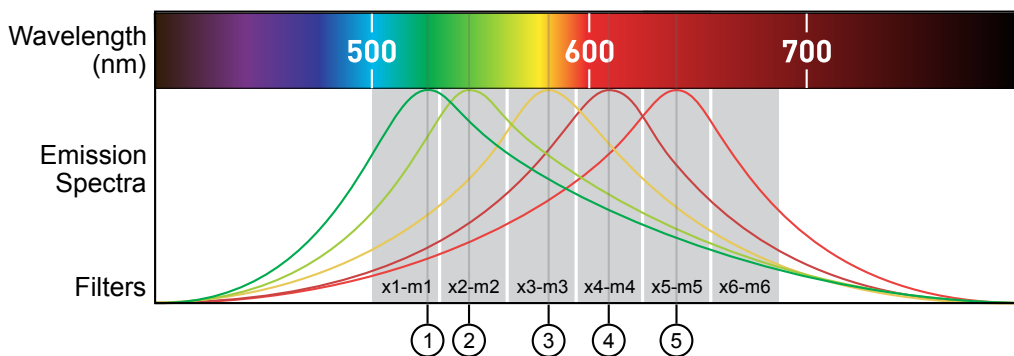
The QuantStudio™ 3 and 5 Systems use a coupled four-color, coupled five-color, or decoupled six-color filter set that supports the dyes shown in the following table and figure. For more information about the spectral dye calibration kits available for the QuantStudio™ 3 and 5 Systems, contact Support.

Peak channel	Color	Filter wavelength (nm) <sup>[1]</sup>		Pre-calibrated dyes	Example custom dyes
		Excitation	Emission		
x1-m1	Blue	470 ± 15	520 ± 15	FAM™ and SYBR™ Green	SYT09
x2-m2	Green	520 ± 10	558 ± 12	VIC™	HEX™, TET™, and JOE™ <sup>[2]</sup>
x3-m3	Yellow	550 ± 10	587 ± 10	ABY™, NED™, and TAMRA™	Cy <sup>fi</sup> 3
x4-m4	Orange	580 ± 10	623 ± 14	JUN™ and ROX™	Texas Red™
x5-m5	Red	640 ± 10	682 ± 14	Cy <sup>fi</sup> 5 and MUSTANG PURPLE™	LIZ™
x6-m6	Deep-Red	662 ± 10	711 ± 12	None <sup>[3]</sup>	Cy <sup>fi</sup> 5.5

<sup>[1]</sup> The central wavelengths are the optimized wavelengths.

<sup>[2]</sup> The HEX™ and TET™ dyes from Thermo Fisher Scientific fall within the emission wavelength range of the system, therefore they can be added and adapted for use in experiments on the system. To add any of these dyes to the Dye Library, perform a custom dye calibration.

<sup>[3]</sup> This filter set currently does not support any dyes supplied by Thermo Fisher Scientific.



① x1-m1 — FAM™, SYBR™ Green

② x2-m2 — VIC™

③ x3-m3 — ABY™, NED™, Cy<sup>fi</sup> 3, and TAMRA™

④ x4-m4 — JUN™, ROX™, and Texas Red™

⑤ x5-m5 — Cy<sup>fi</sup> 5 and MUSTANG PURPLE™

## Custom dyes

The QuantStudio™ 3 and 5 Systems can run assays designed with custom dyes (dyes not supplied by Thermo Fisher Scientific or dyes not pre-calibrated with the instrument). Custom dyes must excite between 455 – 672 nm and emit between 505 – 723 nm. Select a custom dye that does not overlap with other dyes used in an experiment (see the filter-wavelength table in “System dyes” on page 11).

To use a custom dye and add it to the Dye Library, perform a custom dye calibration (see “Calibrate custom dyes” on page 54).

## About data collection

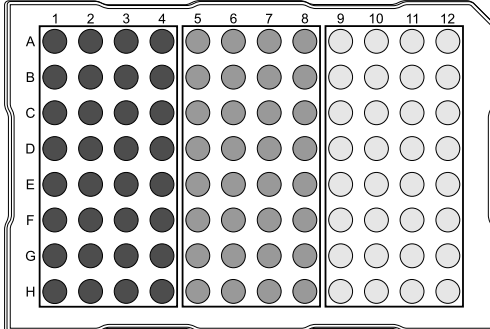
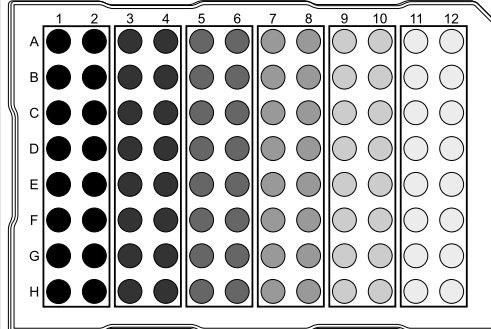
The instrument collects raw fluorescence data at different points during the PCR cycle, depending on the type of run performed.

When you create an experiment template (.edt file) in the desktop or cloud software, you can customize the optical filter channels through which the instrument collects data. You can specify a filter channel set for all PCR thermal protocols and, optionally, a different filter set for the melt curve stage(s).

Run type	Experiment type	Data collection point
Real-time	<ul style="list-style-type: none"> <li>Standard curve</li> <li>Relative standard curve</li> <li>Comparative C<sub>T</sub> (<math>\Delta\Delta C_T</math>)</li> <li>Melt curve</li> </ul>	<p>During the thermal cycling protocol.</p> <p>Typical timing is to collect data at each cycle of a PCR stage or continuously during a melt stage.</p>
Post-PCR (endpoint)	<ul style="list-style-type: none"> <li>Genotyping</li> <li>Presence/ Absence</li> </ul>	<ul style="list-style-type: none"> <li>After thermal cycling is completed. For Presence/Absence and Genotyping experiments, data collection before the PCR cycle is optional, but recommended.</li> <li><i>[Optional]</i> Before thermal cycling starts. Collecting data during the run can confirm genotyping results by viewing traces in allelic discrimination plots or viewing genotyping calls at earlier cycles.</li> </ul>

## Blocks with VeriFlex™ Zones

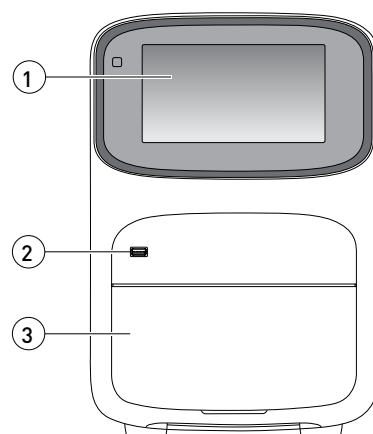
Applied Biosystems™ VeriFlex™ technology provides independent temperature zones that offer enhanced functionality and precise control over your qPCR runs.

QuantStudio™ 3 System	QuantStudio™ 5 System
Three programmable VeriFlex™ Zones.	Six programmable VeriFlex™ Zones. <sup>[1]</sup>
	

<sup>[1]</sup> Only applicable for 96-well 0.2-mL and 0.1-mL blocks.

These independent zones are ideal for qPCR optimization or the ability to run multiple experiments in the same run. Unlike standard gradients which give a sigmoidal temperature curve across the columns, blocks with VeriFlex™ Zones help deliver accurate temperatures across every zone.

## Parts of the instrument



- ① **Touchscreen** – Controls the instrument.
- ② **USB port** – For connection to an external network drive, jump drive, or other external data storage device.
- ③ **Instrument drawer** – Contains sample plate.

The instrument includes three additional USB ports on the back of the instrument. The instrument recognizes only one external storage device at a time for data transfer.



## Software description

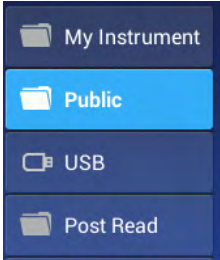


### Instrument, desktop, and cloud software features

The instrument software and the QuantStudio™ Design and Analysis Software (desktop and cloud) include the features described below.

Feature	Instrument	Desktop	Cloud
Use as guest (no sign in)	✓	✓ <sup>[1]</sup>	—
Create templates (unlocked or locked)	—	✓	✓
Edit unlocked templates	✓	✓	✓
Edit locked templates (password assigned by template creator required)	—	✓	✓
Load system or user-created templates (.edt file) to instrument	✓	✓	—
Change experiment settings in template (.edt file) loaded on the instrument  Settings that can be changed in a locked template (no password required): <ul style="list-style-type: none"> <li>• Properties: All settings</li> <li>• Method: No changes allowed</li> <li>• Plate: Sample names</li> </ul> Settings that can be changed in an unlocked template: <ul style="list-style-type: none"> <li>• Properties: All settings</li> <li>• Method: All settings</li> <li>• Plate: Sample names</li> </ul>	✓	—	—
Load plate in instrument	✓	—	—
Start run	✓	✓	—
View real-time data during a run	✓	✓	✓
View instrument status (running, calibration needed, and so on)	✓	—	✓
Analyze results	—	✓	✓
Set calibration reminders	✓	—	✓
Review exported calibration or RNase P verification results	—	✓	✓ (only RNase P)

<sup>[1]</sup> Login required if the Security, Audit, and e-Signature (SAE) module is enabled (QuantStudio™ 5 Systems only)

## Folders, templates, experiments, and projects

Term	Definition	Supported in
Folders in Load Experiment 	Location in which you can store templates (.edt files) on the instrument: <ul style="list-style-type: none"> <li>• <b>My Instrument</b> – Displayed if you are signed in</li> <li>• <b>Public</b> – Location in which all experiments run by guest users are stored</li> <li>• <b>USB</b> – USB for manual transfer to and from a computer</li> <li>• <b>Post Read</b> – If you run an endpoint experiment, the pre-read experiment is automatically saved in this folder for post-read analysis</li> </ul>	Instrument
Experiment Template File (.edt) 	Default settings for an instrument run, can be modified before instrument run.  Two types: <ul style="list-style-type: none"> <li>• Factory-provided, accessed from Open Template (instrument) or Create Experiment (desktop or cloud)</li> <li>• User-created, accessed from Load Experiment</li> </ul>	Instrument Desktop Cloud
Experiment Run File (.eds)	Settings and data for a completed instrument run.	Instrument Desktop Cloud
Project 	Function in the Cloud Data Manager that is used for secondary analysis applications. Does not apply to the QuantStudio™ Design and Analysis cloud Software, which is a primary analysis application.	Cloud

Template and experiment components	Instrument	Desktop	Cloud
Properties	<ul style="list-style-type: none"> <li>• Experiment file name</li> <li>• Reagent information (Reagent barcode, Lot#)</li> <li>• Plate barcode</li> <li>• Data destination (location for auto-transfer of data)</li> <li>• Comments (Tags are not used at this time)</li> </ul>	<ul style="list-style-type: none"> <li>• Experiment file name</li> <li>• Plate barcode</li> <li>• User name</li> <li>• Instrument type</li> <li>• Block type</li> <li>• Experiment type</li> <li>• Chemistry (reagent information)</li> <li>• Run mode</li> <li>• Comments</li> <li>• {Cloud software only} Notifications</li> </ul>	
Method	Thermal cycling conditions	Thermal cycling conditions	

Template and experiment components	Instrument	Desktop	Cloud
Plate	Sample names You cannot edit targets/SNP assays or tasks on the instrument.	Define and assign samples, targets or SNP assays, and tasks in the Quick Setup and Advanced Setup panes of the Plate tab.	
Run	Start and monitor a run in progress View: Time remaining and Temperature, Method, Plots Pause, Resume, Stop a run	Start and monitor a run in progress View: Time remaining and Temperature, Method, Plots	Monitor a run in progress (link to Thermo Fisher Cloud Instrument Details) View: Time remaining and Temperature, Method, Plots
Results	Not applicable	Review plots	
Export	Not applicable	Export results	




### Third-party software installation

Before you install third-party software on the computer running the QuantStudio™ desktop Software, confirm that the third-party software will not:

- Restrict Ethernet communication.
- Interfere with instrument or computer operation.

## Network connection options

You can connect a QuantStudio™ 3 or 5 Instrument to a network or computer in the configurations listed below. For specific information on networking, see “Networking” on page 84.

Direct connection	Local area network (LAN) connection	Cloud connection
wired	wired <i>or</i> wireless	wired <i>or</i> wireless
		

## Experiment types

Purpose	Description
<b>Standard Curve experiment</b>	
Determines absolute target quantity in samples.	<ol style="list-style-type: none"> <li>1. The software measures amplification of the target in a standard dilution series and in test samples.</li> <li>2. The software generates a standard curve using data from the standard dilution series.</li> <li>3. Using the standard curve, the software interpolates the absolute quantity of target in the test samples.</li> </ol>
<b>Relative Standard Curve experiment</b>	
Determines relative target quantity in samples.	<ol style="list-style-type: none"> <li>1. The software measures amplification of the target of interest and of an endogenous control target in a standard dilution series, in a reference (calibrator) sample, and in test samples.  The endogenous control is a target that is expressed equally in all samples; examples of endogenous controls are <math>\beta</math>-actin, GAPDH, and 18S ribosomal RNA. The software can algorithmically incorporate multiple endogenous control targets in relative quantification calculations.  The reference sample is used as the basis for relative quantification results (or 1× sample). For example, in a study of drug effects on gene expression, an untreated control is an appropriate reference sample.</li> <li>2. The software generates standard curves for the target of interest and the endogenous control using data from the corresponding standard dilution series.</li> <li>3. Using the standard curves, the software interpolates the quantities of the target of interest and the endogenous control in each sample. The target quantity in each sample is then normalized to the endogenous control quantity in the sample.</li> <li>4. To determine the relative quantity of the target in test samples, the software divides the normalized target quantity in the sample by the normalized target quantity in the reference sample.</li> </ol>
<b>Comparative <math>C_T</math> (<math>\Delta\Delta C_T</math>) experiment</b>	
Determines relative target quantity in samples.	<ol style="list-style-type: none"> <li>1. The software measures amplification of the target of interest and of an endogenous control target in a reference (calibrator) sample and in test samples.  The endogenous control is a target that is expressed equally in all samples; examples of endogenous controls are <math>\beta</math>-actin, GAPDH, and 18S ribosomal RNA. The software can algorithmically incorporate multiple endogenous control targets in relative quantification calculations.  The reference sample is used as the basis for relative quantification results (or 1× sample). For example, in a study of drug effects on gene expression, an untreated control is an appropriate reference sample.</li> <li>2. The measurements for the target of interest are normalized to the endogenous control.</li> <li>3. To determine the relative quantity of the target in test samples, the software compares the normalized <math>C_T</math> (<math>\Delta C_T</math>) for the sample to the normalized <math>C_T</math> (<math>\Delta C_T</math>) for the reference sample.</li> </ol>

Purpose	Description
<b>Genotyping experiment</b>	
Detects single nucleotide polymorphism (SNP) variants of a target nucleic acid sequence.	<p>Genotyping experiments use preformulated TaqMan™ SNP Genotyping Assays that include:</p> <ul style="list-style-type: none"> <li>Two sequence-specific primers for amplification of sequences containing the SNP of interest.</li> <li>Two allele-specific TaqMan™ probes for Allele 1 and Allele 2.</li> </ul> <ol style="list-style-type: none"> <li>The software normalizes the fluorescence of the reporter dyes to the fluorescence of the passive reference dye in each well.</li> <li>The software plots the normalized intensities (Rn) of the reporter dyes in each sample well on an Allelic Discrimination Plot, which contrasts the reporter dye intensities of the allele-specific probes.</li> <li>The software algorithmically clusters the sample data, and assigns a genotype call to the samples of each cluster according to its position on the plot.</li> </ol>
<b>Presence/Absence experiment</b>	
Determines the presence or absence of a target nucleic acid sequence in a sample.	The software calls the target present or absent based on an algorithmically determined call threshold. (The call threshold is different from the C <sub>T</sub> threshold; the C <sub>T</sub> threshold is not used to make calls.)
<b>Melt Curve experiment</b>	
Determines the melting temperature (T <sub>m</sub> ) of the amplification products of a PCR reaction that used SYBR™ Green dye.	In the software, Melt Curve analysis is included in the default run method for any experiment type that uses SYBR™ Green reagents.



# Start, sign on, and configure the instrument

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## Installation and instrument verification

Before the first use of the instrument:

- Install the instrument (see “Unpack and install the instrument” on page 78).
- Verify instrument performance (see “Perform instrument verification using RNase P plates” on page 49).

**Note:** Instruments are factory calibrated, so no calibration is necessary at installation. However, we recommend that you verify instrument performance before using the instrument.

**Note:** Regular calibration and verification should be performed according to the “Calibration and verification schedule” on page 40.



## Precautions for use



**CAUTION! PHYSICAL INJURY HAZARD.** Do not remove the instrument cover. There are no components inside the instrument that you can safely service yourself. If you suspect a problem, contact technical support.



**CAUTION! FIRE HAZARD.** For continued protection against the risk of fire, replace fuses only with listed and certified fuses of the same type and rating as those currently in the instrument.



**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the sample block temperature can reach 100°C. Allow it to cool to room temperature before handling.



**CAUTION!** Before using a cleaning or decontamination method other than those recommended by Thermo Fisher Scientific, confirm with Thermo Fisher Scientific that the proposed method will not damage the equipment.

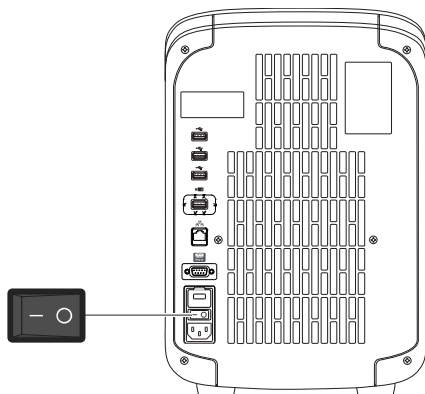


**CAUTION!** Use flat caps for 0.2 mL tubes and 0.1 mL tubes. Rounded caps can damage the heated cover.

## Power on the instrument

To power on the instrument from a powered-off state:

1. Touch anywhere on the touchscreen to determine if the instrument is in sleep mode. If the home screen displays, the instrument is already powered on.
2. If the home screen does not display, power on the instrument by pressing the switch on the rear panel.



The instrument is ready to use when the home screen is displayed.

If left unattended (for about two hours), the instrument automatically enters sleep mode (enabled by default) to conserve power. Refer to the touchscreen Help system for step-by-step instructions for changing the sleep mode setting.










## Parts of the home screen



- ① Avatar and Instrument name
- ② Eject icon
- ③ Help icon
- ④ Status dial
- ⑤ Current user name; instrument block type
- ⑥ Settings button
- ⑦ Buttons for accessing .edf files
- ⑧ Connectivity icons
- ⑨ Sign In (or My Profile) button

**Table 1** Parts of the home screen

Element of the home screen	Function	For more information, see...
Avatar and Instrument name	Set by the administrator to uniquely identify instrument.	"Manage the instrument name (Administrator only)" on page 75.
Eject icon	Touch to open or close the instrument drawer.	—
Help icon	Touch to launch the touchscreen Help system to access step-by-step instructions.	—

Element of the home screen	Function	For more information, see...
Status dial	<ul style="list-style-type: none"> <li>When the instrument is in use – Displays the sample block temperature, the elapsed run time, and the run status. You can swipe the dial to the left or touch  to access real-time views of the run.</li> <li>When the instrument is not in use – Displays Set up run. You can start a run by touching the status dial.</li> <li>When the instrument is locked – Displays a lock icon () within the status dial.</li> </ul>	—
Current user name and block type	<p>Displays the user name of the current signed-in user and the instrument block type.</p> <p><b>Note:</b> If no user is signed-in, the instrument defaults to the Guest profile.</p>	—
Settings button	Touch  <b>Settings</b> to configure, calibrate, or learn about the instrument.	“Configure instrument settings” on page 25.
Buttons for accessing experiment and template files	<b>Load Experiment</b> – Touch to open a user-created .edt file from a Cloud account, USB, instrument folder, or network drive.	“Run an experiment from a saved file” on page 29.
	<b>Open Template</b> – Touch to open a system .edt template file.	“Create and run an experiment from a template” on page 29.
	<p><b>Run Last</b> – Touch to open the last .edt file run on the instrument.</p> <ul style="list-style-type: none"> <li>If you are signed-in, the file opened will be the last file you ran when signed-in.</li> <li>If you are not signed-in, the file opened will be the last file the guest profile ran.</li> </ul>	“Repeat your last experiment run” on page 30.
Connectivity icons	<ul style="list-style-type: none"> <li> – The instrument is connected to a wired network.</li> <li> – The instrument is wirelessly connected.</li> <li> – A USB drive is plugged into the instrument.</li> <li> – The instrument is linked to a Cloud account.</li> </ul>	—
Sign In button (My Profile button when a user is signed in)	<ul style="list-style-type: none"> <li>Touch  <b>Sign In</b> to sign into an instrument profile and link to a Cloud account.</li> <li>Touch  <b>My Profile</b> to change instrument profile settings, link to a Cloud account, or lock the instrument during a run.</li> </ul>	“Sign In” on page 23.

## Use the instrument without signing in


If the instrument is configured by an Administrator to allow guest access ( **Settings** ▶ **Manage Users** ▶ **Sign In Required** set to off), you can use the instrument without signing in.

If you do not sign in to the instrument:

- All actions are logged to Guest user profile.
- You have access only to the Public folder for selecting and storing experiments.
- You cannot transfer data to the Cloud (only to USB or network drive).

## Create a new instrument profile


In the home screen:

1. Touch  **Sign In**.
2. Touch **Get Started**.
3. Touch **Name**, then enter a username and touch **Done**.
4. Touch **PIN Code**, then enter a four-digit numerical password and touch **Enter**.  
**Note:** Touch the **Show PIN** checkbox to switch PIN display on or off.
5. Touch **Confirm PIN** and repeat the previous step.
6. Touch **Create profile**.  
**Note:** “Link your instrument profile to your Thermo Fisher Cloud account” on page 24 at this point, or you can link after signing in.
7. “Sign In” on page 23 to the profile you just created.

## Sign In

“Create a new instrument profile” on page 23 before signing into the instrument.

In the home screen:

1. Touch  **Sign In**.
2. Touch **Sign In**, then select your username.
3. Enter your PIN, then touch **Enter**.

“Link your instrument profile to your Thermo Fisher Cloud account” on page 24 once signed in.

## Sign out

In the home screen:

1. Touch  **My Profile**.
2. Touch **Sign Out**.

## Link your instrument profile to your Thermo Fisher Cloud account

There are two ways to link an instrument profile to a Thermo Fisher Cloud account:


“Link your instrument profile to Thermo Fisher Cloud” on page 24

“Create an instrument profile and link to Thermo Fisher Cloud” on page 24

Linking your instrument profile to your Cloud account allows you to:

- View instrument status from the Cloud.
- Download templates stored in your Cloud account to the instrument.
- Transfer results from the instrument to your Cloud account.

### Link your instrument profile to Thermo Fisher Cloud

1. “Sign In” on page 23 to your instrument profile.
2. Touch  **My Profile**.
3. Touch **Cloud**.
4. Enter your Thermo Fisher Cloud username and password, then touch **Link Account**.
5. Touch **Done** to exit the confirmation screen.

Your instrument profile will link to your Thermo Fisher Cloud account.

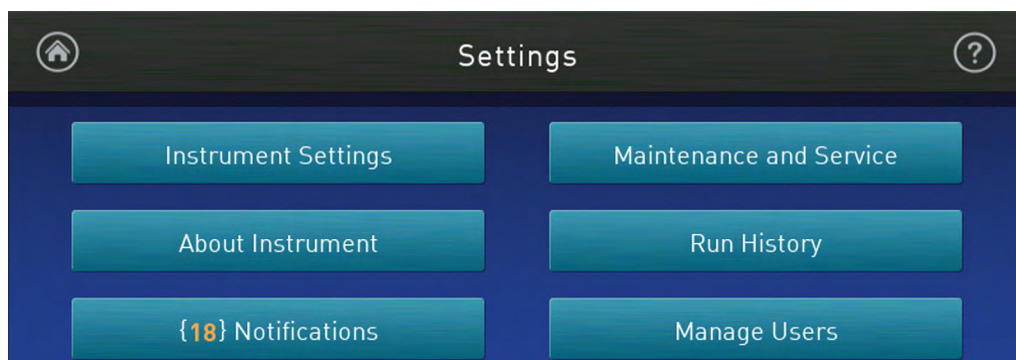
### Create an instrument profile and link to Thermo Fisher Cloud


1. Complete step 1 to step 6 in “Create a new instrument profile”, or continue from “Initial start up” on page 70.
2. In the Get Started – Cloud screen, enter your Thermo Fisher Cloud username and password.
3. Touch **Link Account**.

Your instrument profile will link to your Thermo Fisher Cloud account.

## Configure instrument settings

Touch  **Settings** in the home screen to configure settings as needed.



Touch  for step-by-step instructions on configuring settings.

Options	Description
<b>Instrument Settings</b>	
Instrument Name (Administrator only)	Instrument name. If connected to a network, the instrument name must be unique. <i>(Optional)</i> Add an avatar image for the instrument (.jpg, .png, or .gif) from a USB.
Sleep Mode	Enable the instrument to enter a standby mode after a set length of inactivity.
Heated Cover Temperature	Set the temperature of the heated cover for instrument operation and standby mode. Enable heated cover to automatically turn off during standby mode.
Network Drive	Specify a default network location for the signed-in user.
Insert Plate Reminder	Enable a reminder to insert a plate before starting a run from the instrument.
OEM Connection Only (Administrator only)	Required for API access to the instrument. When enabled, the QuantStudio™ Design and Analysis Software cannot connect to the instrument. API access to the instrument is exclusive to authorized OEM partners.
Cloud Region (Administrator only)	Specify the regional server location to access the Thermo Fisher Cloud Dashboard. <b>Note:</b> Once you set a Cloud region, restore factory defaults to change the region.
Date/Time	Set time zone and date and time formats.
Network Connection	Set wired or wireless network connection for the instrument.
Restore Factory Defaults	Restore the instrument to the factory settings.  <b>IMPORTANT!</b> Back up the instrument before restoring factory defaults (see “Backup or restore the instrument” on page 62).  <b>Note:</b> When you restore an instrument to its factory defaults: <ul style="list-style-type: none"> <li>• User profiles and files stored on the instrument are deleted, including all user-created .edt and .eds files and any custom dye and custom melt calibrations.</li> <li>• System templates and factory calibrations remain on the instrument.</li> </ul>



Options	Description
SAE Mode (Administrator only) (QuantStudio™ 5 Systems only)	When enabled: <ul style="list-style-type: none"> <li>• The home screen displays SAE mode.</li> <li>• Runs must be started from the desktop software. The instrument locks out access to load experiments, open template, run last, start a run, change instrument name and date/time.</li> <li>• Only an administrator can perform calibrations.</li> <li>• A user can monitor a run and view the method from the instrument touchscreen.</li> </ul>
<b>About Instrument</b>	
About Instrument	Displays the instrument Model Name, Block Serial Number, and Firmware Version.
License Agreement	Displays the End User Software License Agreement and the Limited Product Warranty. You can export the License Agreement to a USB drive.
<b>Notifications</b>	
—	Enable home screen notifications of instrument errors and software updates. This function is not related to the Notifications function in the cloud software.  The number of new, unviewed notifications displays over Settings in the home screen.
<b>Maintenance and Service</b>	
Software Update (Administrator only)	Update the instrument software.
Monitoring (Administrator only)	Enable: <ul style="list-style-type: none"> <li>• Remote Monitoring Service to automatically send critical device statistics to Thermo Fisher Scientific (does not monitor or send data).</li> <li>• Thermo Fisher Scientific Cloud Monitor to allow real-time monitoring of instrument runs from a Cloud account.</li> </ul>
Instrument Statistics	Displays instrument usage information: Block Cycle Count and LED Life.
Calibrations	<ul style="list-style-type: none"> <li>• Perform calibrations <ul style="list-style-type: none"> <li>– ROI and Uniformity</li> <li>– Dye</li> <li>– Custom (including Background calibration)</li> </ul> </li> <li>• View calibration history and set calibration reminders in <b>History and Reminders</b></li> </ul>
RNase P Verification	Perform instrument verification using an RNase P plate.
Self Verification Test	Check the instrument hardware functions.
Log	View and export Instrument Log.
Backup / Restore	<ul style="list-style-type: none"> <li>• Backup Instrument</li> <li>• Restore a Backup (Administrator only)</li> </ul>
Ship Prep Mode	Place the instrument in a safe state for shipping, moving, or long-term storage.

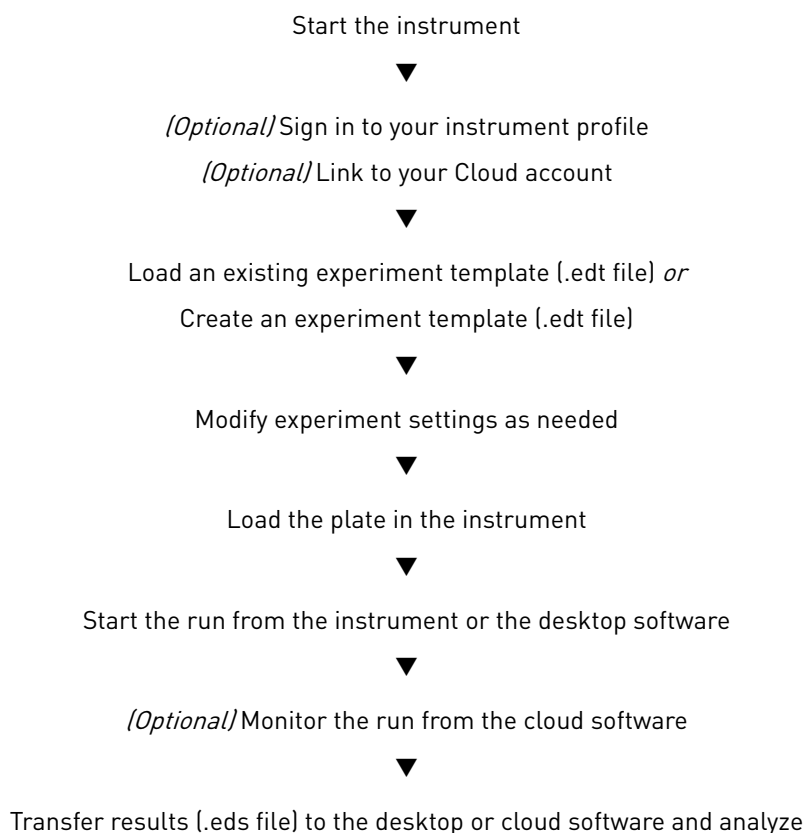
Options	Description
<b>Run History</b>	
—	<p>Displays the experiments run on the instrument and whether the data was transferred.</p> <p><b>Note:</b> Experiments run while a user is signed-in can only be viewed or transferred by that user or an administrator.</p> <p>Touch an experiment to view experiment run details and to transfer or delete .eds file.</p>
<b>Manage Users</b>	
Sign In Required (Administrator only)	Enable the restriction of instrument use to only signed-in users (disables Guest profile use).
Sign Out Timer (Administrator only)	Set the duration of inactivity before a user is automatically signed out.
Manage Profiles (Administrator only)	<ul style="list-style-type: none"> <li>• Instrument</li> <li>• Cloud</li> <li>• All Profiles</li> </ul> <p>Displays the profile information for the instrument and the associated Cloud account.</p>

# 3

## Create and run experiments on the instrument

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### Workflow



## Options for running an experiment










### Create and run an experiment from a template


In the home screen:

1. Touch  **Open Template**.
  2. (Optional) Touch an experiment category in the left column.
  3. Touch the experiment file name.
  4. (Optional) “Define experiment properties”, including Run File Name (.eds file name), Plate Barcode, Reagent Information, and Data Destination.
  5. (Optional) “Edit a method” on page 32.
    - Add, remove, or edit a step, stage, melt curve, or data collection location.
    - Adjust the cover temperature, sample volume, or number of cycles
    - Configure VeriFlex™ Zones, ramp rate, and pause settings.
  6. (Optional) “Define plate wells” with sample names and view Well ID, Targets, or Dyes.
  7. Load a plate in the instrument (see “Load and unload a plate in the instrument” on page 36).
  8. Touch **Start Run**.  
When prompted, confirm that you inserted a plate.
- Note:** To disable this reminder, select **Do not show again** or select  **Settings ▶ Insert Plate Reminder** in the home screen.

### Run an experiment from a saved file

In the home screen:



1. Touch  **Load Experiment**.
2. Touch  **Cloud**,  **USB**,  **My Instrument**, or  **Network Drive** to navigate to your file location.
  - For files saved to the guest profile, touch  **My Instrument ▶ Public**.
  - For pre and post read files, touch  **My Instrument ▶ Post Read**.
3. Touch the experiment file name.
4. (Optional) “Manage template (.edt) files” in either  **USB** or  **My Instrument**.
5. (Optional) “Define experiment properties”, including Run File Name (.eds file name), Plate Barcode, Reagent Information, and Data Destination.

6. (Optional) “Edit a method” on page 32.
  - Add, remove, or edit a step, stage, melt curve, or data collection location.
  - Adjust the cover temperature, sample volume, or number of cycles
  - Configure VeriFlex™ Zones, ramp rate, and pause settings.
7. (Optional) “Define plate wells” with sample names and view Well ID, Targets, or Dyes.
8. Load a plate in the instrument (see “Load and unload a plate in the instrument” on page 36).
9. Touch **Start Run**.  
 When prompted, confirm that you inserted a plate.  
**Note:** To disable this reminder, select **Do not show again** or select  **Settings ▶ Insert Plate Reminder** in the home screen.

## Repeat your last experiment run

This feature is only applicable to runs started from the instrument and not available for runs started from the desktop software. If you are signed-in, this function applies to the last run from your profile.





In the home screen:

1. Touch  **Run Last**.
2. (Optional) “Define experiment properties”, including Run File Name (.eds file name), Plate Barcode, Reagent Information, and Data Destination.
3. (Optional) “Edit a method” on page 32.
  - Add, remove, or edit a step, stage, melt curve, or data collection location.
  - Adjust the cover temperature, sample volume, or number of cycles
  - Configure VeriFlex™ Zones, ramp rate, and pause settings.
4. (Optional) “Define plate wells” with sample names and view Well ID, Targets, or Dyes.
5. Load a plate in the instrument (see “Load and unload a plate in the instrument” on page 36).
6. Touch **Start Run**.  
 When prompted, confirm that you inserted a plate.  
**Note:** To disable this reminder, select **Do not show again** or select  **Settings ▶ Insert Plate Reminder** in the home screen.

## Edit an experiment before starting a run

### Define experiment properties

Open an experiment (see “Run an experiment from a saved file” on page 29) or template (see “Create and run an experiment from a template” on page 29) (.edt files), then touch **Properties** ► **Edit** to define the experiment properties.

- Edit the experiment name.
  - a. Touch the **Run File Name** text field.
  - b. Enter the run file name (.eds file), then touch **Done**.
- Add a plate barcode to your experimental record.
  - a. Touch the **Plate Barcode** text field.
  - b. Enter the **Plate Barcode**, then touch **Done**.
- Record reagents and their expiration dates.
  - a. Touch  **Reagent Information**.
  - b. Touch **Add**, or touch an existing reagent, then touch **Edit** or **Delete**.
  - c. Touch the **Name**, **Type**, **Lot #**, **Reagent Barcode**, **Part #**, or **Expiration Date** field to enter individual reagent information.
  - d. Touch **Done**.
- Automatically transfer data after a run is completed.
  - a. Touch  **Data Destination**.
  - b. Touch , or  to choose a data destination.
  - c. Under your desired data destination, select **Automatically transfer experiment**.
  - d. Touch **Done**.  
 Your selection displays on the Properties screen.
- Add a comment or tag to your experiment record.
  - a. Touch **Comments**.
  - b. Enter text, then touch **Done**.

### Scan a barcode using the optional barcode scanner

The instrument is compatible with an optional Handheld Barcode Scanner (Cat. no. 448842, purchased separately). The barcode scanner reads Code 128 (alphanumeric), which supports 128 ASCII character barcodes.



**WARNING! LASER.** Exposure to direct or reflected laser light can burn the retina and leave permanent blind spots. Never look into the laser beam. Remove jewelry and anything else that can reflect the beam into your eyes. Protect others from exposure to the beam.



To scan a barcode using the hand-held barcode scanner:

1. Select the field in the touchscreen or software where you want to enter the barcode.
2. Hold the hand-held barcode scanner 20–30 cm away from a plate or container label and aim at the center of the barcode, then press the trigger.
3. Slowly move the scanning beam across the barcode until the scanner emits a high-pitched tone.

When the scanner scans a barcode, it automatically:

- Transmits the alphanumeric equivalent of the barcode to the touchscreen or software.
- Transmits a carriage-return character (the equivalent of pressing the Enter key).
- Transmits the reagent information for other fields (Lot #, Part #, Expiration Date, etc.)

For more information on the hand-held barcode scanner, refer to the user documentation shipped with the barcode scanner.


## Edit a method

Access a method for editing.

- “Create and run an experiment from a template” on page 29.
- “Run an experiment from a saved file” on page 29.
- “Repeat your last experiment run” on page 30.

See “Method elements” on page 33 for an overview of the method as it is graphically represented in the software.

In the Method screen:

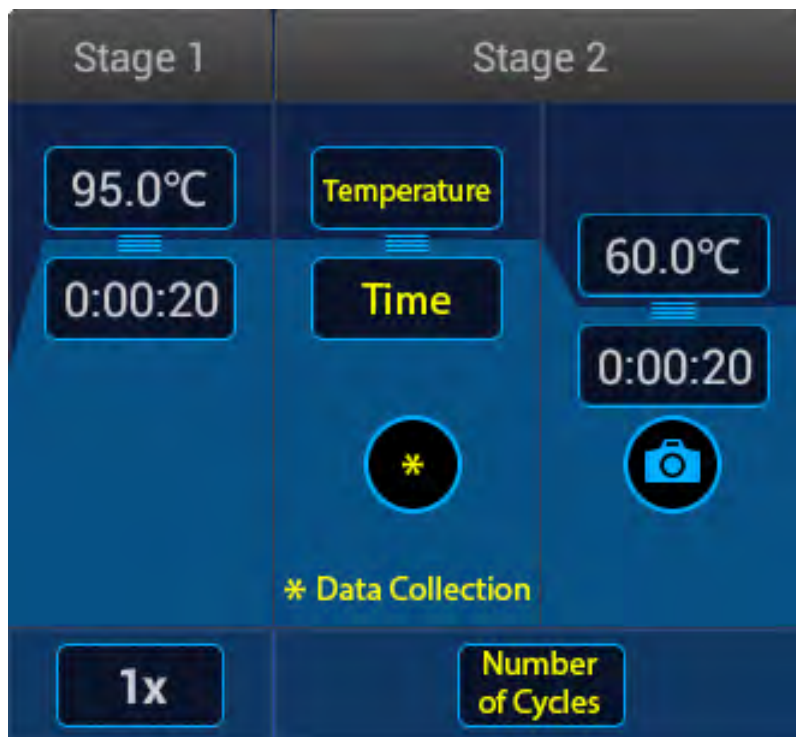
1. Touch **Edit**.
2. Touch in a field, enter any desired change, then touch **Enter**.  
**Note:** Touch and drag  to quickly increase or decrease a step temperature.
3. Touch **Manage Steps** to add or remove a step, stage, melt curve, or data collection location.

**Note:** Manage Steps also provides access to the Advanced Options: **VeriFlex™ Zones**, **Ramp Rates**, and **Add Pause**.

## Method elements

A method consists of one or more stages, each with one or more steps. Within each stage, the number of times the steps repeat is indicated in the Number of Cycles field. The method also specifies the sample volume and heated cover temperature.

See the figure below for a representation of method elements.




## Manage Steps

In the Method screen, touch **Edit ▶ Manage Steps**.

Add or remove a step, stage, melt curve, or data collection point using the **Manage Steps** option. You can also access “Advanced Options” on page 34 from the Manage Steps screen.


- Add a melt curve.
  - a. Touch **Melt curves ▶ Add melt curve**.
  - b. Touch the **+** on the left or right border of a step to add a melt curve before or after, respectively.
  - c. Choose **Continuous** or **Step and hold**.
  - d. Touch melt curve parameters to edit if necessary, then touch **Done**.
  - e. Touch **Done**.

Depending on the experiment type, there may be restrictions on the addition of melt curves.

- Remove a melt curve.
  - a. Touch **Remove melt curve**.
  - b. Touch **—** on the melt curve to be removed.
  - c. Touch **Done**.
- Add a step.
  - a. Touch **Add/Remove steps ▶ Add steps**.
  - b. Touch the **+** on the left or right border of a step to add a step before or after, respectively.
  - c. Enter parameters for the new step, then touch **Enter**.
  - d. Touch **Done**.
- Remove a step.
  - a. Touch **Add/Remove steps ▶ Remove steps**.
  - b. Touch the **—** on any step to remove it, then touch **Done**.
- Add a stage.
  - a. Touch **Add/Remove stages ▶ Add stages**.
  - b. Touch the **+** on the left or right border of a stage to add a stage before or after, respectively.
  - c. Touch **Done**.
  - d. Edit parameters of the new stage in the Method screen (see “Edit a method” on page 32).
- Remove a stage.
  - a. Touch **Add/Remove stages ▶ Remove stages**.
  - b. Touch the **—** on any stage to remove it, then touch **Done**.
- Add or remove data collection locations.
  - a. Touch **Data collection location**.
  - b. Touch  to switch data collection on or off.

### Advanced Options



In the Method screen, touch **Edit ▶ Manage Steps ▶ Advanced Options**.

- To use VeriFlex™ Zones (96-well blocks only):
  - a. Touch **VeriFlex™ Zones**.
  - b. Touch  on the step which you want to apply VeriFlex™ Zones.


- c. Touch each zone to edit the temperature, then touch **Enter**.  
 The background colors of VeriFlex™ Zones change with the temperature edit. Zones with higher temperatures display a background brighter than those with lower temperatures.
- d. (Optional) Apply additional VeriFlex™ Zones.
- e. Touch **Done**.
- To edit Ramp Rates:
  - a. Touch **Ramp Rates**.
  - b. Touch the ramp rates fields.
  - c. Touch **Enter**.
  - d. (Optional) Edit additional steps, then touch **Done**.
- To add a pause into the method:
  - a. Touch **Add Pause**.
  - b. Touch **||** in a stage.
  - c. Enter the pause temperature, and the cycle after which you want the pause to occur.
  - d. Touch **Enter**.  
 The pause is represented by a **P** in the corner of the stage.
  - e. Touch **Done**.

## Define plate wells

Touch the **Plate** tab of an open experiment or template file to access these functions.

Touch  to view the plate layout or  to view the well table.


In the plate layout:

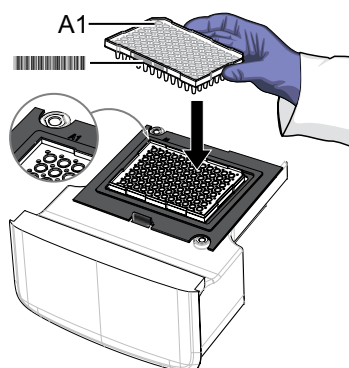
1. Touch **Manage** or touch an individual well.
  - a. Touch the **Samples** tab, select one or more wells, then touch **Edit**.
  - b. Enter a sample name for the well(s) you have selected, then touch **Done**.
  - c. Touch the **Targets** tab to view the targets assigned to the wells.
  - d. In the Targets tab, touch **Details** to view target information, then touch **Done**.
2. Touch **Done** to return to the Plate tab.
3. Touch  to access the well table.
  - a. Touch **Edit** to edit sample names for individual wells.
  - b. Touch a sample name text field, enter a new name, then touch **Done**.

## Load and unload a plate in the instrument



**CAUTION!** Use flat caps for 0.2-mL tubes and 0.1-mL tubes. Rounded caps can damage the heated cover.




1. Load the plate.
  - a. Touch  to eject the instrument drawer.
  - b. Load the plate onto the plate adaptor so that:
    - Well A1 of the plate is in the top-left corner of the plate adaptor.
    - The barcode faces the front of the instrument.



**IMPORTANT!** Plates should be loaded and unloaded by trained operators who have been warned of the moving parts hazard.

**Note:** (For 96-well 0.2-mL blocks only) Do not remove the black plate adaptor before loading a plate or strip tubes. Strip tubes may fit loosely in the adaptor, but when the drawer closes, the heated cover will apply the appropriate pressure to seat the tube strips securely in the adaptor.

**Note:** The 384-well and 96-well Fast (0.1-mL) block configurations do not require a plate adaptor.

- c. Touch  to close the instrument drawer.
2. Unload the plate.
  - a. Touch  to eject the instrument drawer.
  - b. Remove the plate.
  - c. Touch  to close the instrument drawer.





**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the plate temperature can reach 100°C. Allow it to cool to room temperature before handling.

**Note:** If the instrument does not eject the plate, contact Support.


## View, pause, or stop a run

During an instrument run, you can:

- “View well details” on page 37
- “Pause or stop a run” on page 37
- “Adjust the graphical view of an experiment” on page 37
  - Touch  or swipe left once to access real-time views of the run method or to edit the number of cycles.
  - Touch  or swipe left twice to view the real-time data plot.


### View well details

In the home screen, during an instrument run:

1. Touch the right arrow  or swipe left twice.
2. Touch **Well details**.
3. Touch **Samples**, **Targets**, or **Tasks** to select a graphical representation of each.
4. Touch **Close** to return to the home screen.

### Pause or stop a run

In the home screen, during an instrument run:

1. Touch the right arrow  or swipe left to access real-time views of the run.
2. Stop or pause the run.
  - Touch **Stop Run**.
  - Touch **Pause**, then enter a pause temperature.






**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the plate temperature can reach 100°C. If you want to access the plate during a run pause, enter room temperature as the pause temperature and allow the plate to cool to room temperature before handling.

3. (Optional) After pausing a run, touch **Edit** to change the number of cycles.

### Adjust the graphical view of an experiment

In the home screen, during an instrument run:

1. Touch the right arrow  or swipe left twice to access real-time views of the run.
2. Touch **Zoom**.
3. Touch  or  to zoom in or out.
4. Touch the arrows to pan left, right, up, or down on the graph.
5. Touch **Close** to return to the default view.




## Lock the touchscreen during a run

After you have started a run, you can lock the touchscreen so that other users cannot interfere with instrument operation.

**Note:** You must be signed-in to use this feature.

In the home screen:




1. To lock the touchscreen:
  - a. Touch  **My Profile**.
  - b. Touch **Lock Screen**, then touch **Lock**.
2. To unlock the touchscreen:
  - a. Touch anywhere on the touchscreen.
  - b. Touch the **PIN Code** field, and enter your PIN.

**Note:** The touchscreen automatically unlocks when the run is complete.

## Transfer, view, or manage files and results

### Transfer experiment results

In the home screen, when a run is complete:

1. Touch **Transfer File**.
2. Touch  **Cloud**,  **USB**, or  **Network** to select the data destination.
3. Navigate to and select your folder destination.
4. Touch **OK**.
5. Touch **Transfer**.

“View run history” on page 38 to transfer completed run files (.eds files) at any time.

### View run history



In the instrument home screen:

Touch  **Settings** ▶ **Run History**.




- Touch an individual run to view details, then touch **Delete** to delete the record, or **Transfer** to export the experiment .eds file.
- Touch **Manage** to select multiple items for simultaneous viewing, deletion, or transfer.

Guests (users not signed-in) can only view guest records. Users with instrument profiles can also view their own records. Administrators can view all experiment records.

## Manage template (.edt) files

This feature applies to experiment templates (.edt files) on your  **USB** or  **My Instrument**. To manage completed run files (.eds files), see “Transfer experiment results” on page 38.

In the home screen:

1. Touch  **Load Experiment**.
2. Touch  **USB** or  **My Instrument** to select your file location and navigate to your file.
3. Touch **Manage Files**.
4. (Optional) Navigate through the **My Instrument**, **Public**, **USB**, and **Post Read** folders to access an .edt file. Folder availability depends on your sign-in status.
5. Touch to select one or more files.
6. Delete or copy files.
  - Touch **Delete Files** and confirm deletion.
  - Touch **Copy Files**, choose a file destination, then touch **Paste Files**.
7. Touch **Done**.



# Calibrate and verify instrument performance

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■ Calibrate custom dyes .....	54
■ Calibrate for a custom melt curve experiment .....	60

## Calibration and verification schedule

The instrument is factory calibrated and does not require calibration at installation. To ensure optimal performance, perform calibrations at the recommended frequency.

**Note:** After instrument installation, we recommend performing instrument verification using the provided RNase P plate.

---

**IMPORTANT!** Perform calibrations and run experiments under the environmental conditions specified in “Environmental requirements” on page 95. Exposure to extreme temperatures can have adverse effects on the run results, as well as shortening the life span of the instrument components.

---

Calibration type	Recommended frequency
ROI/Uniformity	<ul style="list-style-type: none"><li>Every two years (recommended)</li></ul> <p><b>Note:</b> Set the calibration interval for your instrument: <b>Settings ▶ Maintenance and Service ▶ Calibrations ▶ History and Reminders ▶ Edit ▶ Exp interval field.</b></p> <ul style="list-style-type: none"><li>Background calibration can be performed as needed to check for contamination (depends on usage and laboratory conditions).</li></ul>
Dye	
Background	
RNase P instrument verification	<ul style="list-style-type: none"><li>After installing or moving the instrument</li><li>As needed thereafter to confirm instrument performance</li></ul>

**Note:** For preparing custom dye plates and performing custom calibrations, see “Calibrate custom dyes” on page 54.

## Calibration descriptions


Calibration type	Purpose	Description	Pass criteria
ROI/Uniformity	The software uses calibration data to map the increase in fluorescence to the plate wells during subsequent runs and to evaluate well-to-well consistency of the signals.	The software captures a plate image for each optical filter.	<ul style="list-style-type: none"> <li>The image for each filter distinguishes all wells of the plate.</li> <li>Each well in the image must be distinct and visible at the same luminosity relative to the other wells in the image.</li> </ul>
Background	The software uses calibration data to remove background fluorescence during a run. <b>Note:</b> You can also run this calibration to determine if contamination is related to the sample block or the plate.	The software captures a background image for each optical filter in the absence of sample and reagent, and compares the fluorescence from each well to the average for the plate.	The plate images for all filters are free of abnormal fluorescence.
Dye	The software uses calibration data to characterize and distinguish the individual contribution of each dye in the total fluorescence signals collected by the instrument.	The software extracts a spectral profile for each dye standard, then produces a set of spectral profiles plotted as fluorescence vs filter.	<ul style="list-style-type: none"> <li>Dye spectra peak within the same filter as their group.</li> <li>Dye spectra can diverge slightly at other wavelengths.</li> </ul>




## View the calibration status and set reminders

### View calibration status and set reminders in the instrument

**Note:** The calibration reminders feature requires a connection between the instrument and a computer network.



In the home screen:

1. Touch  **Settings** ▶ **Maintenance and Service** ▶ **Calibrations** ▶ **History and Reminders**.
2. In the Calibration Reminders screen, view the status of each calibration type.
3. (Optional) Touch a calibration row to view the history of that specific calibration type, then touch **Done**.
4. Touch **Edit** to configure the calibration reminder settings. For each calibration type:
  - a. Slide the control **On** or **Off** to enable or disable the calibration reminder.
  - b. Touch the **Exp interval** and **Remind me** text fields to set the calibration time tables.

- c. Touch **Save** to save the settings or **Cancel** to exit the screen without saving.
5. (Optional) Touch **Export** to transfer the calibration report to a  Cloud account,  USB, or  Network drive.
6. Touch **Done** to return to the Calibrations screen.

### View calibration status and set reminders in the Cloud

**Note:** The calibration reminders feature requires a connection between the instrument and a computer network.

1. In the Thermo Fisher Cloud, click  for the Instrument Connect page.
2. Select any of your registered instruments.
3. In the Summary tab:
  - Click **+ Calibrations** to view the status of each calibration type.
  - (Optional) Click **+ Calibration Reminders** to set the calibration reminder time table and enter the notification email address(es).  
**Note:** More than one email address can receive the calibration reminders.  
**Note:** The settings are automatically saved.
  - (Optional) In the Downloads section, click **Maintenance Summary.pdf** to download the calibration status report.
4. In the Calibrations History tab:
  - View the history of each calibration type.
  - (Optional) Click  to download the calibration history report.

## Perform ROI/Uniformity, Background, and Dye calibrations

### Workflow: Calibration

If you start an ROI/Uniformity calibration, the instrument automatically prompts for calibrations to be performed in this order.

Perform an ROI/Uniformity calibration  
 (Always followed by the other calibrations below.)



Perform a Background calibration  
 (Perform any time that the ROI/Uniformity calibration is current.)



Perform Dye calibrations  
 (Perform any time that the ROI/Uniformity and Background calibrations are current.)

## Prepare a calibration plate

### Materials required for calibration plate preparation

- Plate(s) for the calibration you are performing:
  - ROI/Uniformity plate (one ROI plate needed)
  - Background calibration plate
  - Dye calibration plates

**Note:** We recommend calibrating with all Spectral Dye Calibrations Plates available for your block configuration even if you are not using all the dyes in the plates.

**Note:** Do not discard the packaging for the calibration plates. Each calibration plate can be used up to 3 times if the plate is:

- Stored in its packing sleeve at  $-15$  to  $-25^{\circ}\text{C}$
- Used within 6 months after opening
- Used before the plate's expiry date
- Centrifuge with plate adapter; buckets cleaned before use
- Powder-free gloves
- Safety glasses

### Thaw, vortex, and centrifuge a calibration plate

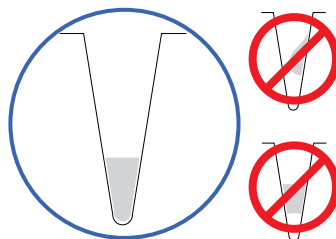
1. Remove the calibration plate from the freezer, then thaw the plate in its packaging. Keep plates protected from light until you perform the calibration.
  - Thaw each plate for 30 minutes.
  - Use each plate within 2 hours of thawing.

---

**IMPORTANT!** Do not remove the plate from its packaging until you are ready to use it. The fluorescent dyes in the wells of calibration plates are photosensitive. Prolonged exposure to light can diminish the fluorescence of the dyes.

---

2. While wearing powder-free gloves, remove the calibration plate from its packaging and retain the packaging. Do not remove the optical film.
3. Vortex the plate for 5 seconds, then centrifuge for 2 minutes at  $750$  to  $1000 \times g$ .
4. Confirm that the liquid in each well is at the bottom of the well and free of bubbles. If it is not, centrifuge the plate again.



---

**IMPORTANT!** Keep the bottom of the plate clean. Fluids and other contaminants on the bottom of the plate can contaminate the sample block and cause an abnormally high background signal.

---



## Perform calibrations

1. In the home screen:


Calibration type	Touch
ROI/Uniformity <sup>[1]</sup>	⚙️ <b>Settings ▶ Maintenance and Service ▶ Calibrations ▶ ROI and Uniformity</b>
Background	⚙️ <b>Settings ▶ Maintenance and Service ▶ Calibrations ▶ Custom ▶ Background</b>
Dye	⚙️ <b>Settings ▶ Maintenance and Service ▶ Calibrations ▶ Dye</b>

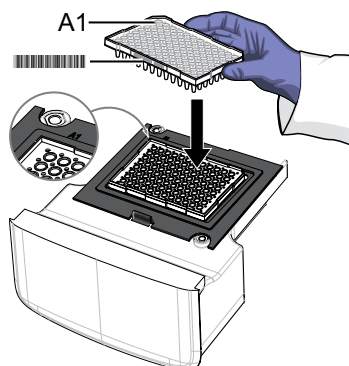
<sup>[1]</sup> Automatically followed by Background and Dye calibrations.

2. Follow the instructions on the screen to start the calibration.

**Note:** *Dye calibration only:* Select the Dye Plate to run, then touch **Next**.

3. Load the plate.

- a. Touch  to eject the instrument drawer.
- b. Load the plate onto the plate adaptor so that:
  - Well A1 of the plate is in the top-left corner of the plate adaptor.
  - The barcode faces the front of the instrument.





---

**IMPORTANT!** Plates should be loaded and unloaded by trained operators who have been warned of the moving parts hazard.

---

**Note:** (For 96-well 0.2-mL blocks only) Do not remove the black plate adapter before loading a plate or strip tubes. Strip tubes may fit loosely in the adapter, but when the drawer closes, the heated cover will apply the appropriate pressure to seat the tube strips securely in the adapter.

**Note:** The 384-well and 96-well Fast (0.1-mL) block configurations do not require a plate adapter.



- c. Touch  to close the instrument drawer.

4. Touch **Start**.

5. When the run is complete and the screen displays Calibration Complete, touch **View Results** to check the calibration status.

Calibration status	Action
Passed	Touch <b>Next</b> to proceed to the next required calibration.
Failed	See "Troubleshoot calibration failure" on page 47.

**Note:** You can view the calibration images only after the ROI/Uniformity and Background calibrations pass.

6. Unload the plate.
  - a. Touch  to eject the instrument drawer.
  - b. Remove the plate.
  - c. Touch  to close the instrument drawer.



**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the plate temperature can reach 100°C. Allow it to cool to room temperature before handling.

**Note:** If the instrument does not eject the plate, contact Support.

7. Return the plate to its original packaging.

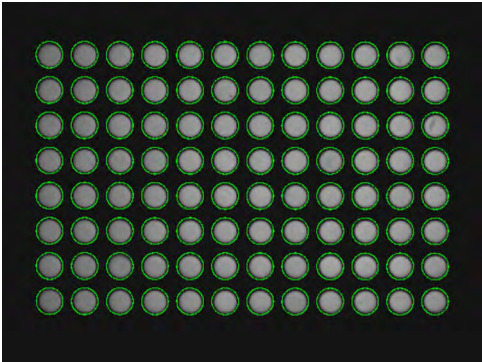
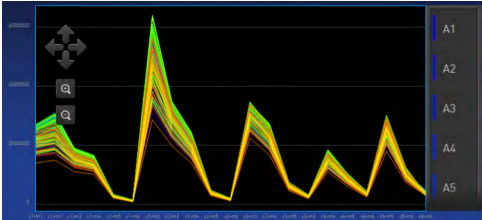
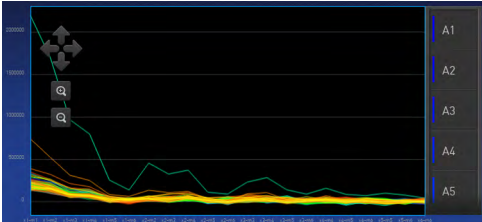
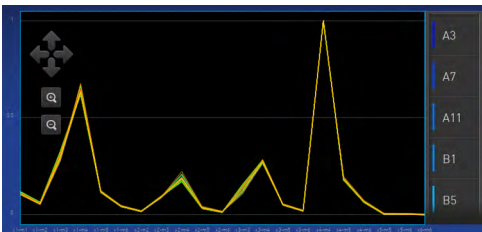
**Note:** Each calibration plate can be used up to 3 times if the plate is:

- Stored in its packing sleeve at -15 to -25°C
- Used within 6 months after opening
- Used before the plate's expiry date

## View calibration images and transfer results to USB

The instrument performs the ROI, Uniformity, and Background calibrations in sequence. You can view the calibration images after the Background calibration is complete.

1. In the Calibration Status screen, touch **Details**.
2. In the Details screen, touch a calibration type to view its images and plots.

Calibration	Example results indicating successful calibration
ROI  <b>Note:</b> Select the desired filter combination from the Filter Set drop-down list.	Green circles around all wells and bright well centers.  
Uniformity	Signals from each well following a uniform trend.  
Background	Few, if any, signals with abnormally high fluorescence.  
Dye	Signals from each well following a uniform trend.  

3. In the Calibration Status screen:

a. Touch **Accept Results** or **Reject Results**.

Accepting the results saves the calibration data to the instrument and overwrites existing data.

b. (Optional) Touch **Transfer EDS** to transfer the calibration data to a USB.

## Troubleshoot calibration failure

Observation	Possible cause	Recommended action
Calibration failed	The plate was improperly prepared.	Ensure the following: <ul style="list-style-type: none"> <li>The correct plate was used for the calibration performed.</li> <li>The plate was properly thawed.</li> <li>The plate was properly spun down.</li> <li>The heat seal of the plate was properly sealed.</li> </ul>
	The plate is damaged or contaminated.	Check for damage, improper heat seal, or contamination.
		Order a replacement plate. If the replacement plate fails, contact Support.
High fluorescent signal	Signals that exceed the limit of normal fluorescence may indicate fluorescent contaminants on the plate or the sample block.	See "Identify contamination" on page 47.
Calibration failed but plate is undamaged	The incorrect plate was used for calibration performed.	Use the plate that matches the calibration performed.
	The plate was improperly prepared.	Repeat the calibration with the plate properly prepared.
		If the calibration fails again, order a replacement plate. If the replacement plate fails, contact Support.

## Identify contamination

Signals that exceed the limit of normal fluorescence may indicate fluorescent contaminants on the calibration plate or the sample block. Common contaminants include ink residue from permanent pens, powder from disposable gloves, and dust.

To identify and resolve a possible contamination problem:

1. View the calibration data and note the wells that failed the quality check.
2. Remove the plate from the instrument, rotate the plate 180°, then perform the calibration again.

3. Determine the location of the failed wells again as in step 1.

If the position(s) of the failed well(s) are...	Action
Identical	The sample block is contaminated. Decontaminate the sample block (see “Decontaminate the sample block” on page 63).
Reversed	The plate is contaminated. Discard the plate, then perform the calibration using a new calibration plate.

4. If the calibration fails after you decontaminate the sample block and replace the plate, contact Support.

### Create a background plate (optional)

Whenever possible, use a background plate listed in Appendix C, “Parts and materials”. These plates contain a buffer that accurately simulates the reagents used for PCR, and, therefore, produces high-quality calibration data.

If a background plate is not available, you can create one as described below.

#### Required materials

- MicroAmp™ optical 96-well reaction plate
- Optical adhesive cover or optical flat caps
- Pipettor, 200-μL (with pipette tips)
- Powder-free gloves
- Safety glasses
- Deionized water

---

**IMPORTANT!** Wear powder-free gloves while creating the background plate.

---

1. Remove a reaction plate from its box and place it on a clean, dry surface.
2. Aliquot the appropriate volume of deionized water to each well of the reaction plate.  
Recommended volume for a 96-well plate is 10–20 μL per well.
3. Seal the plate using an optical adhesive cover or optical flat caps.
4. Use the plate for background calibration as you would a background plate from the spectral calibration kit.

## Perform instrument verification using RNase P plates

Instruments are factory calibrated, so calibration is not necessary for initial installation. However, we recommend that you verify the instrument performance before using the instrument.

After future calibrations, we highly recommend verifying the instrument performance. The instrument must have valid ROI/Uniformity, Background, and Dye calibrations to perform instrument verification.

### Instrument verification description and schedule

Purpose	Description	Pass criteria	Frequency
Confirms the performance of the instrument.	Quantifies the number of copies of the human RNase P gene in samples with known concentrations of the corresponding DNA template.	$[(C_{TA}) - 3(\sigma_{CTA})] > [(C_{TB}) + 3(\sigma_{CTB})]$ where: <ul style="list-style-type: none"> <li><math>C_{TA}</math> = Average <math>C_T</math> of unknown population A</li> <li><math>\sigma_{CTA}</math> = Standard deviation of unknown population A</li> <li><math>C_{TB}</math> = Average <math>C_T</math> of unknown population B</li> <li><math>\sigma_{CTB}</math> = Standard deviation of unknown population B</li> </ul> The instrument successfully distinguishes between unknown populations A and B with a statistical confidence level of 99.7%	<ul style="list-style-type: none"> <li>After installing or moving the instrument</li> <li>As needed to confirm instrument performance</li> </ul>

### RNase P Instrument Verification Plates

The RNase P plate contains the reagents necessary for the detection and quantitation of genomic copies of the human RNase P gene (a single-copy gene encoding the RNase moiety of the RNase P enzyme). Each well contains: PCR master mix, RNase P primers, FAM™ dye-labeled probe, and a known concentration of human genomic DNA template.

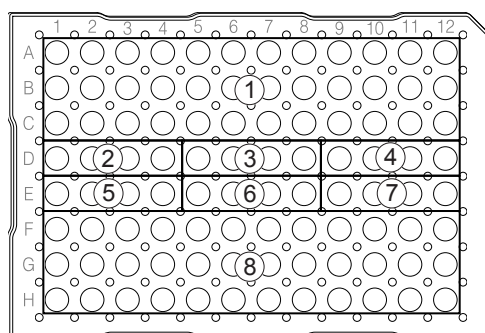
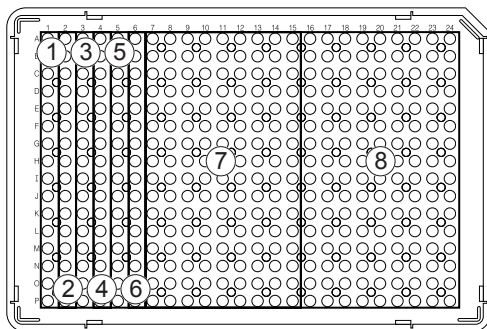


Figure 1 96-Well RNase P plate

- |                             |                     |
|-----------------------------|---------------------|
| ① Unknown A (5000)          | ⑤ STD 5000 copies   |
| ② NTC (no template control) | ⑥ STD 10000 copies  |
| ③ STD 1250 copies           | ⑦ STD 20000 copies  |
| ④ STD 2500 copies           | ⑧ Unknown B (10000) |





**Figure 2** 384-Well RNase P plate

- |                             |                     |
|-----------------------------|---------------------|
| ① NTC (no template control) | ⑤ STD 10000 copies  |
| ② STD 1250 copies           | ⑥ STD 10000 copies  |
| ③ STD 2500 copies           | ⑦ Unknown A (5000)  |
| ④ STD 5000 copies           | ⑧ Unknown B (10000) |

### Analytical performance

After the run, the software calculates average copy number values and standard deviation values. The instrument passes verification if the following inequality is true:

$$[(C_{TA}) - 3(\sigma_{CTA})] > [(C_{TB}) + 3(\sigma_{CTB})]$$

where:

- $C_{TA}$  = Average  $C_T$  of unknown population A
- $\sigma_{CTA}$  = Standard deviation of unknown population A
- $C_{TB}$  = Average  $C_T$  of unknown population B
- $\sigma_{CTB}$  = Standard deviation of unknown population B

### Installation specification

The instrument passes the installation specification if the inequality holds and the instrument successfully distinguishes between unknown populations A and B with a statistical confidence level of 99.7%.

The software automatically adjusts the threshold and omits a defined number of wells from the unknown populations to meet the installation specifications. To view any of the omitted well(s), open the verification file in the desktop software or cloud software.

### Prepare an RNase P plate

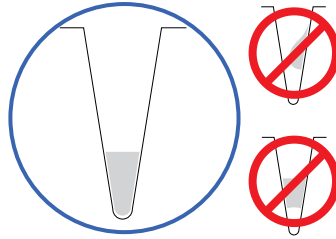
#### Materials required for RNase P plate preparation

- RNase P instrument verification plate
- Centrifuge with plate adapter; buckets cleaned before use
- Powder-free gloves
- Safety glasses

#### Thaw, vortex, and centrifuge an RNase P plate

1. Remove the RNase P plate from the freezer, then thaw the plate in its packaging.
  - Thaw the plate for approximately 5 minutes.
  - Use the plate within 30 minutes of thawing.
2. While wearing powder-free gloves, remove the plate from its packaging.

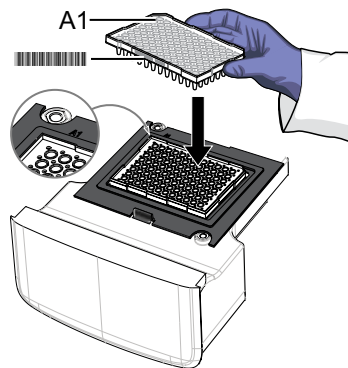
3. Vortex the plate for 5 seconds, then centrifuge for 2 minutes at 750 to 1000 × g.
4. Confirm that the liquid in each well is at the bottom of the well and free of bubbles. If it is not, centrifuge the plate again.



**IMPORTANT!** Keep the bottom of the plate clean. Fluids and other contaminants on the bottom of the plate can contaminate the sample block and cause an abnormally high background signal.

## Perform RNase P verification

1. In the home screen, touch **Settings** ▶ **Maintenance and Service** ▶ **RNase P Verification**.
2. Load the plate.
  - a. Touch to eject the instrument drawer.
  - b. Load the plate onto the plate adaptor so that:
    - Well A1 of the plate is in the top-left corner of the plate adaptor.
    - The barcode faces the front of the instrument.



**IMPORTANT!** Plates should be loaded and unloaded by trained operators who have been warned of the moving parts hazard.



**Note:** (For 96-well 0.2-mL blocks only) Do not remove the black plate adapter before loading a plate or strip tubes. Strip tubes may fit loosely in the adapter, but when the drawer closes, the heated cover will apply the appropriate pressure to seat the tube strips securely in the adapter.

**Note:** The 384-well and 96-well Fast (0.1-mL) block configurations do not require a plate adapter.

- c. Touch to close the instrument drawer.

3. Touch **Start**.
4. When the run is complete and the screen displays Verification Complete, touch **View Results** to confirm the status of the run.

Calibration status	Action
Passed	Instrument is ready for use.
Failed	See "Troubleshoot verification failure" on page 53.

5. In the RNase P Verification Status screen, touch:
  - **Accept Results** to save the results to the instrument
  - **Reject Results** to delete the RNase P verification results
  - **Export Results** to export the calibration results to a USB
6. Unload the plate.
  - a. Touch  to eject the instrument drawer.
  - b. Remove the plate.
  - c. Touch  to close the instrument drawer.



**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the plate temperature can reach 100°C. Allow it to cool to room temperature before handling.

**Note:** If the instrument does not eject the plate, contact Support.

## Troubleshoot verification failure

Observation	Possible cause	Recommended action
Verification failed	The plate was improperly prepared.	Ensure the following: <ul style="list-style-type: none"> <li>The correct plate was used for the verification performed.</li> <li>The plate was properly thawed.</li> <li>The plate was properly spun down.</li> <li>The heat seal of the plate was properly sealed.</li> </ul>
		Open the verification file in the desktop software or cloud software to view the flags and troubleshooting details for failed wells.
	The plate is damaged or contaminated.	Check for damage, improper heat seal, or contamination.
		Order a replacement plate. If the replacement plate fails, contact Support.
High fluorescent signal	Signals that exceed the limit of normal fluorescence may indicate fluorescent contaminants on the plate or the sample block.	See “Identify contamination” on page 47.
Verification failed but plate is undamaged	The incorrect plate was used for verification.	Use the correct RNase P plate for verification.
	The plate was improperly prepared.	Repeat the verification with a new properly prepared plate. <b>Note:</b> The verification procedure is an experiment run, so each RNase P plate can only be used once.
		Open the verification file in the desktop software or cloud software to view the flags and troubleshooting details for failed wells.
		If the verification fails again, order a replacement plate. If the replacement plate fails, contact Support.

## Calibrate custom dyes

### Custom dyes overview

The QuantStudio™ 3 and 5 Real-Time PCR Systems can be used to run assays designed with custom dyes (dyes not manufactured by Thermo Fisher Scientific or dyes not pre-calibrated with the instrument). Custom dyes must excite between 455–672 nm and emit between 505–723 nm.

### Custom dye calibration

For each custom dye, determine the optimal dye concentration. Use this concentration for preparing all subsequent dye calibration plates.

#### Dilute the custom dye to an optimal concentration

Prepare a custom dye dilution plate



Run the dilution plate as an experiment



Determine the optimal dye concentration



#### Calibrate the custom dye for each plate

Create a custom dye calibration plate



Add a custom dye to the software



Perform a custom dye calibration

### Dilute the custom dye to an optimal concentration

#### Custom dye dilution guidelines

Prepare a dilution series for each custom dye.

- Target several dye concentrations within a range of 100–2000 nM.
- Choose a 2- or 3-fold difference in dilution points.
- Dispense 10–20 µL per well for 96-well plates or 5 µL per well for 384-well plates.
- Dilute the dye in buffer compatible with your master mix.
- *(Intercalating dyes only)* Add the appropriate amount of amplified PCR product to generate fluorescence.

#### Prepare a custom dye dilution plate

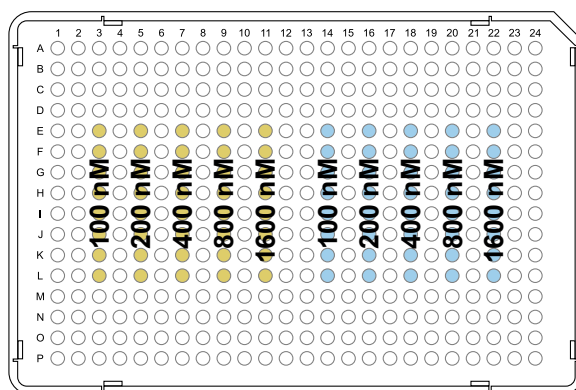
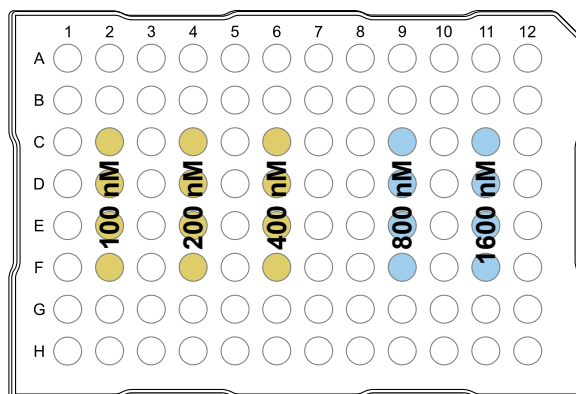
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**IMPORTANT!** Wear powder-free gloves throughout the procedure.

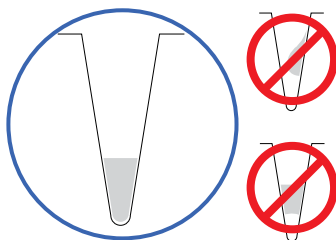
---

1. Prepare a 2 or 3-fold dilution series of the custom dye.
2. Dispense aliquots of each dilution into the center of a reaction plate, then seal the plate.

A full plate is not needed. See the figures below for suggested replicates.



3. Vortex the plate for 5 seconds, then centrifuge for 2 minutes at 750 to 1000  $\times$  g.
4. Confirm that the liquid in each well is at the bottom of the well and free of bubbles. If it is not, centrifuge the plate again.



**IMPORTANT!** Keep the bottom of the plate clean. Fluids and other contaminants on the bottom of the plate can contaminate the sample block and cause an abnormally high background signal.



## Run the dilution plate as an experiment

1. Load the plate into the instrument.
2. Set up a genotyping experiment on the instrument.
  - Load an experiment created in either the desktop or cloud software.
    - a. In the home screen, touch **Load Experiment**.
    - b. Select the experiment location, then the experiment file.
  - Create a new experiment on the instrument touchscreen.
    - a. In the home screen, touch **Open Template ▸ Genotyping ▸ Genotyping Post**.
    - b. (Optional) In the Properties tab, edit the experiment properties.
    - c. In the Method tab, set the hold temperature to 60°C with a 2 minute hold and enter the appropriate reaction volume.
    - d. In the Plate tab, enter the dilution series information for the appropriate wells.
3. Touch **Start Run**.
4. When the run is complete, download the results for analysis.
5. Unload the plate from the instrument.



**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the plate temperature can reach 100°C. Allow it to cool to room temperature before handling.

---

## Determine the optimal dye concentration

Review the dye signal data and select the dilution to calibrate.

1. In the **Results** tab of either the desktop or cloud software, select **Raw Data Plot**.

This plot displays the raw fluorescent signal of each dye, for individual wells and at individual cycles over the duration of the PCR run.

**Note:** The Raw Data Plot is not available for viewing on the instrument touchscreen.
2. For each replicate population of dilutions, select the wells in the Plate Layout tab to view in the plot.

- Examine the raw data and identify the well(s) yielding signals according to the ranges shown in the following table.

Plate type	Acceptable signal range
96-well	800,000 to 3,200,000
384-well	400,000 to 2,000,000

**Note:** You can also export the raw data and average for the various concentrations.

- Select the lowest (optimal) dye concentration that falls within the acceptable signal range.

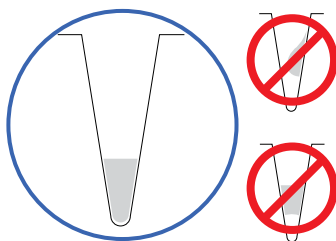
## Calibrate the custom dye

### Create a custom dye calibration plate

**IMPORTANT!** Wear powder-free gloves while creating the dye plate.

Create a full plate of the custom dye diluted to the optimal concentration:

- Dilute the custom dye to the optimal concentration in buffer. Prepare an adequate volume, using a recommended volume range of 10–20  $\mu\text{L}$ /well for a 96-well plate.
- Pipet the appropriate volume of the diluted custom dye to all wells of an optical reaction plate.
- Seal the plate.
- Vortex the plate for 5 seconds, then centrifuge for 2 minutes at 750 to 1000  $\times$  g.
- Confirm that the liquid in each well is at the bottom of the well and free of bubbles. If it is not, centrifuge the plate again.



**IMPORTANT!** Keep the bottom of the plate clean. Fluids and other contaminants on the bottom of the plate can contaminate the sample block and cause an abnormally high background signal.

### Add a custom dye to the software

- In the home screen, touch **Settings** **► Maintenance and Service** **► Calibrations** **► Custom** **► Custom Dye**.
- Touch **Add Custom Dye** to enter information about the new custom dye.

3. Enter the dye information:


Field/option	Action
Custom Dye Name	Enter a name for the custom dye. <b>IMPORTANT!</b> <ul style="list-style-type: none"> <li>• Do not use a system dye name for a custom dye name.</li> <li>• Dye names are case and spacing sensitive.</li> </ul>
Type	Select: <ul style="list-style-type: none"> <li>• <b>Reporter</b> – The dye works in conjunction with a quencher dye to report an increase of PCR product.</li> <li>• <b>Quencher</b> – The dye suppresses the fluorescence of a reporter dye until amplification of PCR product.</li> <li>• <b>Both</b> – The dye reports an increase of PCR product without the aid of a quencher dye.</li> </ul>

4. Touch **Save** to add the custom dye or **Cancel** to exit the screen without saving the new dye details.

**Note:** You must add the custom dye to the desktop or cloud software dye libraries before creating, running, or analyzing experiments that use custom dyes. Refer to the *QuantStudio™ Design and Analysis desktop Software User Guide* (Pub. no. MAN0010408) or the *QuantStudio™ Design and Analysis cloud Software Help* (Pub. no. MAN0010414).

### Perform a custom dye calibration

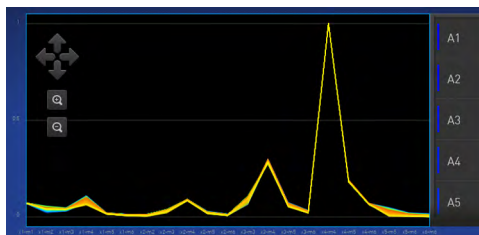
**IMPORTANT!** If you added a custom dye to the dye library in the desktop software or cloud software, you will need to re-enter the custom dye information in the instrument touchscreen before you perform the custom dye calibration (see “Add a custom dye to the software” on page 57).

1. Load the plate (see “Load and unload a plate in the instrument” on page 36).
2. In the home screen, touch  **Settings** ▶ **Maintenance and Service** ▶ **Calibrations** ▶ **Custom** ▶ **Custom Dye**.
3. Touch the custom dye you wish to calibrate.
4. Review the custom dye information, make changes as necessary, then touch **Update**.
5. Enter the calibration temperature.
6. (Optional) Touch **Reagents**, then enter reagent information.
7. Touch **Start**.
8. When the run is complete and the screen displays Calibration Complete, touch **View Results** ▶ **Details**.

9. Review the plot. Passing calibration results show uniform signals with peaks aligned with the dye's wavelength.

Peak channel	Filter wavelength (nm) <sup>[1]</sup>	
	Excitation	Emission
x1-m1	470 ± 15	520 ± 15
x2-m2	520 ± 10	558 ± 12
x3-m3	550 ± 10	587 ± 10
x4-m4	580 ± 10	623 ± 14
x5-m5	640 ± 10	682 ± 14
x6-m6	662 ± 10	711 ± 12

<sup>[1]</sup> The central wavelengths are the optimized wavelengths.



**Note:** Example dye calibration plot.  
The peaks for your dye may align with a different filter set.

10. Select an action depending on whether the custom dye calibration passed or failed.


Calibration status	Action
Passed	<ul style="list-style-type: none"> <li>Touch <b>Accept Results</b> or <b>Reject Results</b>.</li> </ul> <p><b>Note:</b> Accepting the results saves the calibration data to the instrument and overwrites existing data.</p> <ul style="list-style-type: none"> <li>[Optional] Touch <b>Transfer EDS</b> to transfer the calibration data to a USB.</li> </ul>
Failed	<ul style="list-style-type: none"> <li>Create another custom dye plate using the next dye concentration greater than the concentration determined in “Determine the optimal dye concentration”, then perform the calibration again.</li> <li>See “Troubleshoot calibration failure” on page 47.</li> </ul>

11. Unload the plate (see “Load and unload a plate in the instrument” on page 36).


## Calibrate for a custom melt curve experiment

**Note:** A custom melt calibration calibrates a custom dye and a melt calibration at the same time.

Before running the custom melt calibration:

- Ensure that all calibrations are current (touch  **Settings** ▶ **Maintenance and Service** ▶ **Calibrations** ▶ **History and Reminders**).
- “Add a custom dye to the software” on page 57.

In the home screen:

1. Touch  **Settings** ▶ **Maintenance and Service** ▶ **Calibrations** ▶ **Custom** ▶ **Custom Melt**.
2. Touch **PCR + Melt** or **Melt only** as appropriate for the kit you are using.
3. Load the plate (see “Load and unload a plate in the instrument” on page 36).
4. Select or add a dye, then select a filter set appropriate for your dye's wavelength (see filter-wavelength table below).

**Note:** Refer to your reagent kit documentation for dye name and wavelength information.

Peak channel	Filter wavelength (nm) <sup>[1]</sup>	
	Excitation	Emission
x1-m1	470 ± 15	520 ± 15
x2-m2	520 ± 10	558 ± 12
x3-m3	550 ± 10	587 ± 10
x4-m4	580 ± 10	623 ± 14
x5-m5	640 ± 10	682 ± 14
x6-m6	662 ± 10	711 ± 12

<sup>[1]</sup> The central wavelengths are the optimized wavelengths.

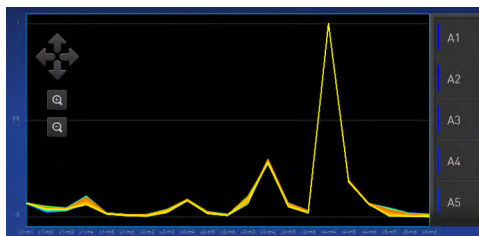
---

**IMPORTANT!** If the selected filter set does not match your reagent kit documentation, then the incorrect wavelength may be collected during a run.

---

5. (Optional) Touch **Reagents**, then enter reagent information.
6. Touch **Start**.
7. When the run is complete and the screen displays Calibration Complete, touch **View Results** ▶ **Details**.

8. Review the plot. Passing calibration results show uniform signals with peaks aligned with the dye's wavelength.



**Note:** Example dye calibration plot.  
The peaks for your dye may align with a different filter set.

9. Select an action depending on whether the custom dye calibration passed or failed.

Calibration status	Action
Passed	<ul style="list-style-type: none"> <li>Touch <b>Accept Results</b> or <b>Reject Results</b>.</li> </ul> <p><b>Note:</b> Accepting the results saves the calibration data to the instrument and overwrites existing data.</p> <ul style="list-style-type: none"> <li>(Optional) Touch <b>Transfer EDS</b> to transfer the calibration data to a USB.</li> </ul>
Failed	<ul style="list-style-type: none"> <li>Create another custom dye plate using the next dye concentration greater than the concentration determined in "Determine the optimal dye concentration", then perform the calibration again.</li> <li>See "Troubleshoot calibration failure" on page 47.</li> </ul>

10. Unload the plate (see "Load and unload a plate in the instrument" on page 36).

**Note:** You must add the custom dye to the desktop or cloud software dye libraries before creating, running, or analyzing experiments that use custom dyes. Refer to the *QuantStudio™ Design and Analysis desktop Software User Guide* (Pub. no. MAN0010408) or the *QuantStudio™ Design and Analysis cloud Software Help* (Pub. no. MAN0010414).

**Note:** To perform a custom melt experiment, you can either create a Standard Curve or a Custom experiment with melt, then specify the data points per degree in the method.



# Maintain the instrument

■ Backup or restore the instrument .....	62
■ Decontaminate the sample block .....	63
■ Replace the instrument fuses .....	65
■ Power on or off, store, and move .....	66


---





**IMPORTANT!** This chapter contains user maintenance procedures for the instrument. Procedures other than those described in this document must be performed by a qualified Service Engineer.

---

## Backup or restore the instrument

In the home screen:

Touch  **Settings** ▶ **Maintenance and Service** ▶ **Backup/Restore**.

To	Action
Backup	<ol style="list-style-type: none"> <li>1. Touch <b>Backup Instrument</b>.</li> <li>2. Touch  <b>USB</b> or  <b>Cloud</b> to choose where to backup your instrument.</li> <li>3. Enter a backup file name, then touch <b>Done</b>.</li> <li>4. Select which elements you will backup, or leave them all selected.</li> <li>5. Touch <b>Backup</b>.</li> </ol>
Restore (Administrator only)	<ol style="list-style-type: none"> <li>1. Touch <b>Restore a Backup</b>.</li> <li>2. Touch  <b>USB</b> or  <b>Cloud</b> to select where you will restore from.</li> <li>3. Select your backup file, then touch <b>Restore</b>.</li> </ol>

## Decontaminate the sample block

Perform this procedure to eliminate fluorescent contaminants from the instrument sample block. Contamination is generally evident in failed background calibrations where one or more wells consistently exhibit abnormally high signals.



**CAUTION! PHYSICAL INJURY HAZARD.** Do not remove the instrument cover. There are no components inside the instrument that you can safely service yourself. If you suspect a problem, contact Support.



**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the sample block temperature can reach 100°C. Allow it to cool to room temperature before handling.



**CAUTION!** Before using a cleaning or decontamination method other than those recommended by Thermo Fisher Scientific, confirm with Thermo Fisher Scientific that the proposed method will not damage the equipment.

### Materials required

- Safety glasses
- Powder-free gloves
- Tissue, lint-free
- Cotton or nylon swabs and lint-free cloths
- Pipette (100-μL) with pipette tips
- Deionized water
- Ethanol, 95% solution
- Bleach, 10% solution

### Clean the sample block

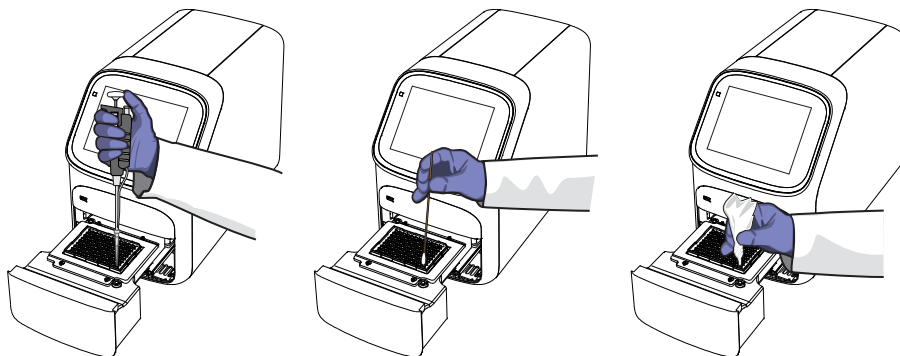


**CAUTION! PHYSICAL INJURY HAZARD.** During instrument operation, the sample block temperature can reach 100°C. Allow it to cool to room temperature before handling.

**IMPORTANT!** Wear powder-free gloves when you perform this procedure.

1. Identify the contaminated wells of the sample block (see “Identify contamination” on page 47).
2. Prepare the instrument and access the sample block:
  - a. Power off and unplug the instrument, then allow it to cool for 15 minutes.
  - b. Pull the instrument drawer forward to expose the sample block.

3. Rinse the contaminated wells of the sample block with deionized water (see “Solvents for cleaning the sample block” on page 65).



4. Close the drawer and test the block for contamination:
  - a. Push the instrument drawer back in to the instrument.
  - b. Plug in, then power on the instrument.
  - c. Perform a background calibration to confirm that you have eliminated the contamination.
5. If the contamination remains:
  - a. Repeat step 2 – step 3.
  - b. Clean the contaminated wells of the sample block using a 95% ethanol solution (see “Solvents for cleaning the sample block” on page 65).
  - c. Repeat step 3 – step 4 to rinse the sample block and to confirm that you have eliminated the contamination.

---

**IMPORTANT!** Always use deionized water to rinse wells after cleaning with bleach or ethanol solution.

---

6. If the contamination still remains:
  - a. Repeat step 2 – step 3.
  - b. Clean the contaminated wells of the sample block using a 10% bleach solution (see “Solvents for cleaning the sample block” on page 65).
  - c. Repeat step 3 – step 4 to rinse the sample block and to confirm that you have eliminated the contamination.

---

**IMPORTANT!** Always use deionized water to rinse wells after cleaning with bleach or ethanol solution.

---

7. If the contamination continues to remain, contact Support.

## Solvents for cleaning the sample block

**IMPORTANT!** Use these solvent cleaning procedures *only* in conjunction with the "Clean the sample block" procedures.

### Rinse the sample block with deionized water

1. Pipet a small volume of deionized water into each contaminated well.
2. In each well, pipet the water up and down several times to rinse the well.
3. Pipet the water to a waste beaker.
4. Use a cotton swab to scrub inside of each contaminated well.
5. Use a lint-free cloth to absorb the excess deionized water.

### Clean the sample block with 95% ethanol

1. Pipet a small volume of 95% ethanol solution into each contaminated well.
2. In each well, pipet the solution up and down several times to rinse the well.
3. Pipet the ethanol solution to a waste beaker.

**IMPORTANT!** Always use deionized water to rinse wells after cleaning with bleach or ethanol solution.

### Clean the sample block with 10% bleach

1. Pipet a small volume of 10% bleach solution into each contaminated well.
2. In each well, pipet the solution up and down several times to rinse the well.
3. Pipet the bleach solution to a waste beaker.

**IMPORTANT!** Always use deionized water to rinse wells after cleaning with bleach or ethanol solution.

## Replace the instrument fuses



**CAUTION! FIRE HAZARD.** For continued protection against the risk of fire, replace fuses only with listed and certified fuses of the same type and rating as those currently in the instrument.

### Materials required



- Fuses (2) – 10A, Time-Lag T, 250VAC, 5 × 20mm
- Safety glasses
- Powder-free gloves
- Screwdriver, flathead

## Replace the fuses

1. Power off and unplug the instrument, then allow it to cool for 15 minutes.
2. Using a flat-head screwdriver, unscrew and remove the fuse holder.



3. Remove each fuse from its fuse holder and inspect it for damage. Carbon typically coats the inside of failed fuses.

Good	Failed
	


4. Replace each failed fuse.  
**Note:** The voltage and amperage ratings are on the fuse holder.
5. Install the fuse holder back into the instrument.
6. Plug in, then power on the instrument.  
The installation is successful if the instrument powers on.

**Note:** Fuse failure can result from fluctuations in the supplied power to the system. To prevent further failures, consider installing an electrical protective device, such as a UPS or a surge protector. If issues with the fuse persist, contact Support.

## Power on or off, store, and move

### Enable sleep mode

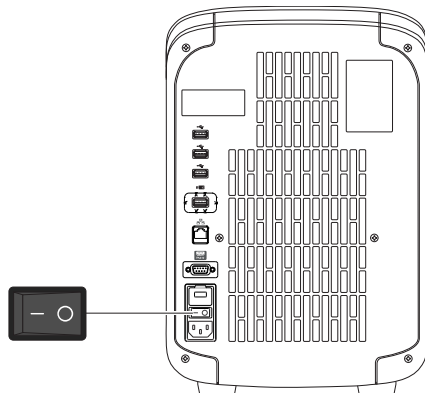
In the home screen:

1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Sleep Mode**.
2. Slide the control **On** or **Off**.
3. Touch **Edit Time**, then enter the period of inactivity until the software goes into sleep mode.
4. Touch **Enter**.
5. Touch **OK**.

## Power on the instrument

To power on the instrument from a powered-off state:

1. Touch anywhere on the touchscreen to determine if the instrument is in sleep mode. If the home screen displays, the instrument is already powered on.
2. If the home screen does not display, power on the instrument by pressing the switch on the rear panel.



The instrument is ready to use when the home screen is displayed.

If left unattended (for about two hours), the instrument automatically enters sleep mode (enabled by default) to conserve power. Refer to the touchscreen Help system for step-by-step instructions for changing the sleep mode setting.

## Power off the instrument




The instrument operates in low-power mode when not in use. However, the instrument can be powered off completely so that the components draw no power.

**Note:** If you will be shutting down the instrument for >1 week, see “Prepare the instrument to ship, move, or store” on page 67.

1. Power off the instrument from the power switch on the rear of the instrument.
2. Power off the computer.

## Prepare the instrument to ship, move, or store

In the home screen:

1. Touch  **Settings** ▶ **Maintenance and Service** ▶ **Ship Prep Mode** ▶ **Next**.
2. Touch  to eject the instrument drawer.
3. Load the packing plate or an empty plate, then touch  to close the drawer.
4. Touch **Lock Block**.
5. Power off the instrument using the power switch on the back of the instrument.

The instrument is now ready to ship, move, or store.



## Move the instrument



**CAUTION! PHYSICAL INJURY HAZARD.** Do not attempt to lift the instrument or any other heavy objects unless you have received related training. Incorrect lifting can cause painful and sometimes permanent back injury. Use proper lifting techniques when lifting or moving the instrument. At least two people are required to lift it.

**IMPORTANT!** Moving your instrument can create subtle changes in the alignment of the instrument optics. Recalibrate the instrument if necessary.


- Ensure that the surface on which you place the instrument can support at least 35 kg (77 lbs).
- Ensure that the path to transport the instrument is clear of obstructions.
- At least two people are needed to lift and carry the instrument.
- Keep your spine in a good neutral position.
- Bend at the knees and lift with your legs.
- Do not lift an object and twist your torso at the same time.
- Coordinate your intentions with your assistant before lifting and carrying.

**IMPORTANT!** After moving the instrument, perform an RNase P instrument verification run. If the run fails, perform ROI/ uniformity, background, and dye calibrations.

## Return the instrument for service

The service process requires 2 to 3 weeks.

Before returning the instrument for service:

1. Back up the instrument (see “Backup or restore the instrument” on page 62).
2. In the home screen, touch  **Settings** ▶ **Instrument Settings** ▶ **Reset Factory defaults** to unlink from all Cloud accounts.
3. Set the instrument to Ship Prep Mode (see “Prepare the instrument to ship, move, or store” on page 67).

To return the instrument for service:

1. Contact your local customer care center or technical support group to obtain a copy of the Certificate of Instrument Decontamination, a service notification, a service call number, and packaging materials (if required).
2. Follow the instructions in the form to decontaminate the instrument.

**IMPORTANT!** The instrument must be decontaminated before packing it for shipping.

3. Complete and sign a copy of the Certificate of Instrument Decontamination.
4. Fax the Certificate of Instrument Decontamination to the customer care center.

5. Pack the instrument in the provided packaging and follow the instructions in the table below.

Prepare	Include	Exclude
<ol style="list-style-type: none"> <li>1. Transfer any data files from the instrument.</li> <li>2. Load an empty plate in the sample block.</li> <li>3. Use the touchscreen to place the instrument in ship mode.</li> </ol> <p><b>Note:</b> The empty plate and ship mode protects the internal components of the instrument during transport.</p>	<ul style="list-style-type: none"> <li>• Instrument</li> <li>• Completed and signed Certificate of Instrument Decontamination</li> </ul> <p><b>Note:</b> The instrument will not be accepted for service without a hard copy of the Certificate of Instrument Decontamination.</p>	<p>Any accessories, including:</p> <ul style="list-style-type: none"> <li>• Power cord</li> <li>• Ethernet cable</li> <li>• USB drive</li> <li>• Wireless adapter</li> </ul> <p><b>Note:</b> If included with the instrument, these items will be disposed of during service and not returned.</p>

6. Attach the postage provided with the Certificate of Instrument Decontamination to the box, then ship the instrument to the designated facility.



# Profile and instrument configuration tasks

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## Initial start up

Perform these tasks during the initial start up or after you “Restore factory defaults” on page 74.

1. (Optional) “Configure the network” on page 74, or touch **Neither/Decide Later**.
2. (Optional) “Manage the instrument name (Administrator only)” on page 75.
3. “Set the date and time” on page 76.
4. “Select a Cloud region (Administrator only)” on page 75, or touch **Next** to continue.
5. “Create an administrator profile” on page 71.
6. “Link your instrument profile to Thermo Fisher Cloud” on page 24 or touch **Skip**.

## Manage profiles

To	See
Create a profile	<ul style="list-style-type: none"> <li>• “Create an administrator profile” on page 71</li> <li>• “Create a new instrument profile” on page 23</li> </ul>
Configure a profile	<ul style="list-style-type: none"> <li>• “Link your instrument profile to your Thermo Fisher Cloud account” on page 24</li> <li>• “Edit a user profile” on page 72</li> </ul>
View or manage all profiles	<ul style="list-style-type: none"> <li>• “View all user profiles (Administrator only)” on page 71</li> <li>• “Manage all instrument profiles (Administrator only)” on page 71</li> </ul>



### Create an administrator profile

“Initial start up” on page 70 of the instrument automatically prompts for the creation of an administrator profile. The first profile created during instrument startup is given administrator privileges. Administrators can assign additional users administrative privileges (see “Manage all instrument profiles (Administrator only)” on page 71).

1. Touch **Name**, then enter a username and touch **Done**.
2. Touch **PIN**, then enter a four-digit numerical password and touch **Enter**.  
**Note:** Touch the **Show PIN** checkbox to switch PIN display on or off.
3. Touch **Confirm PIN** and repeat the previous step.
4. Touch **Create profile**.

### View all user profiles (Administrator only)

In the home screen:



1. Navigate to a list of all profiles.
  - Touch  **My Profile**, then touch the **All Profiles** tab.
  - Touch  **Settings** ▶ **Manage Users** ▶ **Manage Profiles**.

A list of Users, the date their profile was created, and User type is displayed.

2. Touch **Done**.

### Manage all instrument profiles (Administrator only)

In the home screen:



1. Touch  **My Profile**, then touch the **All Profiles** tab.  
Alternatively, touch  **Settings** ▶ **Manage Users** ▶ **Manage Profiles**, then touch the **All Profiles** tab.
2. Select the instrument profile to edit.

3. Edit the profile.
  - To delete the profile, touch **Delete profile** ▶ **Delete**.
  - To reset the PIN, touch **Reset PIN** ▶ **Reset**.
    - The PIN will be deleted, and the user will be directed to enter a new PIN upon the next sign in.
  - To enable or disable administrative privileges, slide the control to Administrator or Standard.
4. Touch **Done**.

## Edit a user profile

“Sign In” on page 23 to access these functions. “Manage all instrument profiles (Administrator only)” on page 71 from this screen if you are an administrator.

In the home screen:


1. Touch  **My Profile**.  
 Administrators can also navigate to this screen by touching  **Settings** ▶ **Manage Users** ▶ **Manage Profiles**.
2. Touch **Edit**.
3. Select the fields to edit, then make changes.
4. Touch **Done**.

## Enable SAE mode (Administrator only)

**Note:** The Security, Audit, and e-Signature (SAE) module is available for QuantStudio™ 5 Systems only.

The SAE module works with the instrument and desktop software to record and restrict various user activities. Audits and e-Signatures are tracked within the desktop software.

In the home screen:


1. Touch  **Settings** ▶ **Instrument Settings** ▶ **SAE Mode**.
2. Slide the control **On** or **Off**.
3. Touch **OK**.

The following functions are disabled in SAE mode.

- Start a run from the instrument.
- Edit an instrument name.
- Edit an instrument date or time.
- Restore to factory defaults.
- Perform a software update.

## Require sign-in (Administrator only)


In the home screen:

1. Touch  **Settings** ▶ **Manage Users** ▶ **Sign In Required**.
2. Slide the control **On** or **Off**.
3. Touch **Done**.

Requiring a user to sign in disables guest profiles.

## Enable remote instrument monitoring (Administrator only)

In the home screen:




1. Touch  **Settings** ▶ **Maintenance and Service** ▶ **Monitoring**.
2. Configure your instrument monitoring settings.

Option	Description
Remote Monitoring Service	Slide the control <b>On</b> or <b>Off</b> to enable or disable the instrument to automatically notify Thermo Fisher Scientific support teams in real time of potential instrument issues. Data and experiments are not monitored.
Thermo Fisher Cloud Monitor	Slide the control <b>On</b> or <b>Off</b> to enable or disable real-time monitoring of amplification plots from your Thermo Fisher Cloud dashboard.

3. Touch **OK**.

## Update instrument software (Administrator only)

In the home screen:

1. Touch  **Settings** ▶ **Maintenance and Service** ▶ **Software Update**.
2. Touch  **USB** or  **Cloud** to select the location of the update files.
3. When prompted, confirm your request to update the software.




## Restore factory defaults

---

**IMPORTANT!** Back up the instrument before restoring factory defaults (see “Backup or restore the instrument” on page 62).

---

In the home screen:


1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Restore Factory Defaults**.
2. Touch **Restore Factory Defaults**.
3. Power **Off**, then power **On** the instrument to effect the change in settings.  
All profile and personal information will be permanently removed from the instrument.

Following a factory default restore, follow the procedures described in “Initial start up” on page 70.

## Configure the network



What do you want to do?

 “Set up a wired connection” on page 74

 “Set up a wireless connection” on page 75

### Set up a wired connection

In the home screen:

1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Network Connection** ▶  **Wired**.
2. Touch a radio button to choose to connect to a network by DHCP or a Static IP address on the Network Configuration screen.

Option	Action
<b>Automatic</b>	Touch <b>DHCP</b>
<b>Manual</b>	<ol style="list-style-type: none"> <li>1. Touch <b>Static IP</b></li> <li>2. Enter the appropriate IP addresses for the instrument, the Subnet Mask, and, optionally, the Default Gateway, the Primary DNS Server, and the Secondary DNS Server using the numeric editor. Addresses are in the form of X.X.X.X, where each X is a 3-digit number, from 001 to 255.</li> </ol>



**Note:** Ask your system administrator if the IP address is assigned statically or dynamically. For static addresses, you need to know the IP address for the instrument, the subnet mask, and the default gateway.

3. Touch **OK** to save the changes and return to the Network Connection screen.

“Create an administrator profile” on page 71 to continue the initial start up of the instrument.


## Set up a wireless connection

In the home screen:


1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Network Connection** ▶  **Wireless** to display a list of the available networks.
2. Select a network or touch **Join other network**, then enter the network password and touch **Enter**.  
If you choose Join other network, enter the network name and security type.
3. Touch **Join** to continue or **Cancel** to exit.
4. In the Network Connection Complete screen, touch **Next** to continue.
5. Touch **OK**.
6. Edit the Network details in the Network Configuration screen or touch **Done**.

Proceed to “Create an administrator profile” on page 71 to continue the initial start up of the instrument.

## Select a Cloud region (Administrator only)


During the initial startup, you will be automatically prompted to select a Cloud region. Return to the selection through  **Settings**, if necessary.

In the home screen:

1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Cloud Region**.
2. Touch a region.  
The server used to store your data is located in this region.
3. Touch **OK**.


## Manage the instrument name (Administrator only)

In the home screen:

1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Instrument Name**.
2. Touch the Instrument Name field, enter an instrument name, then touch **Done**.
3. (Optional) Touch **Add Avatar** to associate an avatar with your instrument. You must insert a USB drive with images to use this option.
4. Touch **OK**.


## Set the date and time

In the home screen:

1. Touch  **Settings** ▶ **Instrument Settings** ▶ **Date/Time**.
2. Select a time zone from the drop-down list.
3. Select a date format.
  - a. Touch **Date Format**.
  - b. Select the radio button of your preferred date format.
  - c. Touch **Next**, touch the date field, and enter the date.
  - d. Touch **Enter**, then touch **Done**.
4. Select a time format.
  - a. Touch **Time Format**.
  - b. Slide the control left or right to choose a 12-hour or 24-hour clock.
  - c. Touch **Next**, touch the time field, and enter the time.
  - d. Touch **Enter**, then touch **Done**.
5. Touch **Done**.

## Manage the Sign Out Timer (Administrator only)

In the home screen:

1. Touch  **Settings** ▶ **Manage Users** ▶ **Sign Out Timer**.
2. Touch the **Edit Time** field, then enter the desired duration of inactivity before automatic user sign out.
3. Touch **Enter**, then touch **Done**.



# Install and connect the instrument to a network

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## Workflow: Install and connect to a network

Perform all steps in “Before you begin” on page 78



“Unpack and install the instrument” on page 78



“Power on and follow the startup wizard” on page 79



“Perform instrument verification using RNase P plates” on page 49



“Connect the instrument and the computer directly or to a LAN” on page 79



“Download and install the QuantStudio™ Design and Analysis desktop Software” on page 82

## Before you begin

This section provides instructions for customer installation of the computer and the instrument. For installation by a field service engineer (FSE), contact Support to order a service call.

Before starting the installation::

- Review “Networking” on page 84 to determine the configuration for your instrument and obtain the network information you need
- Review site requirements in *QuantStudio™ 3 and 5 Real-Time PCR Systems Site Preparation Guide* (Pub. no. MAN0010405)
- Review the connections in “Instrument and computer connections” on page 81

## Unpack and install the instrument

1. Prepare the installation site as described in *QuantStudio™ 3 and 5 Real-Time PCR Systems Site Preparation Guide* (Pub. no. MAN0010405).
2. Follow the pre-printed instructions on the instrument box to unpack the instrument, accessories, and reference documentation. Save the packing material for future use or recycle it.

The instrument box contains:

- One instrument
  - Accessories: power cable, Ethernet cable, USB drive, reaction tube retainer
  - Shipping plate
- Note:** Save the shipping plate but do not use it to operate the instrument.
- Reference documentation: Welcome note, unpacking and set up instructions card, system documentation insert

If you ordered the wireless adapter, it is provided separately.

3. Place the instrument on the bench.
4. Plug the power cable into the instrument power port at the rear of the instrument and the other end into a receptacle.
5. Connect your instrument as required by your network configuration (see “Supported network configuration options” on page 84 and “Instrument and computer connections” on page 81).
  - Connect an Ethernet cable to the connector on the rear of the instrument and to a computer or a LAN.
  - or
  - Connect wirelessly via the wireless adapter.

**Note:** Do not connect the High Power USB WiFi Module (Cat. no. A26774) to the instrument if it is connected to a network by an Ethernet cable. Configuring the instrument for both wired and wireless connection can interfere with instrument operation.



## Power on and follow the startup wizard

1. Power on the instrument.
2. Follow the startup wizard through the following tasks:
  - Accept license agreement
  - Choose networking option  
Select **Wired** or **Wireless** as needed for your configuration (see “Supported network configuration options” on page 84)
  - Configure instrument  
Specify time zone, date format, and time format.
  - Create administrator profile

You can perform any of the steps above at a later time if you do not have the information needed to complete the startup screens. See “Configure instrument settings” on page 25.

---

**IMPORTANT!** Before using the instrument for the first time, we recommend that you “Perform instrument verification using RNase P plates” on page 49.

---

## Connect the instrument and the computer directly or to a LAN

This section describes direct wired connection of the computer provided by Thermo Fisher Scientific to the instrument or to a LAN.

Do not connect a customer-provided computer to the instrument.

1. Connect an Ethernet cable from the instrument or a LAN to the computer.
2. Power on the computer, then log in using a Windows™ Administrator account.
3. In the Windows™ desktop, right-click **My Network Places ▶ Properties**.
4. Right-click **Local Area Connection**, then select **Properties**.
5. Select **Internet Protocol (TCP/IP) ▶ Properties**.

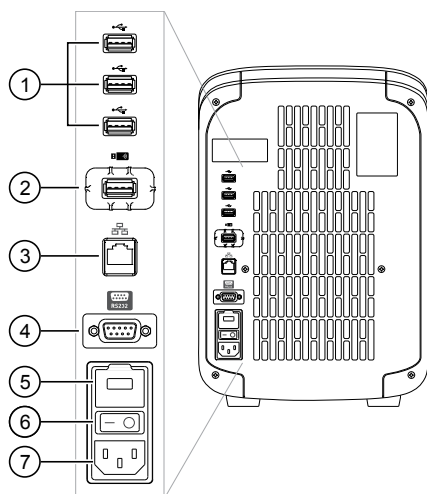


6. Set the Internet Protocol (TCP/IP) Properties for either DHCP or Static IP communication:

Network configuration	Action
DHCP	<ol style="list-style-type: none"> <li>1. Select <b>Obtain an IP address automatically</b>.</li> <li>2. Set the DNS address. If the computer obtains DNS addresses: <ul style="list-style-type: none"> <li>• Automatically – Select <b>Obtain DNS server address automatically</b>.</li> <li>• Statically – Select <b>Use the following DNS address</b>, then enter the address of the preferred and alternate DNS servers (if available).</li> </ul> </li> </ol>
Static IP	<ol style="list-style-type: none"> <li>1. Select <b>Use the following IP address</b>.</li> <li>2. In the IP Address field, enter the static IP address.</li> <li>3. If necessary, enter a subnet mask.</li> <li>4. If necessary, enter a static gateway address in the Default Gateway field.</li> </ol>

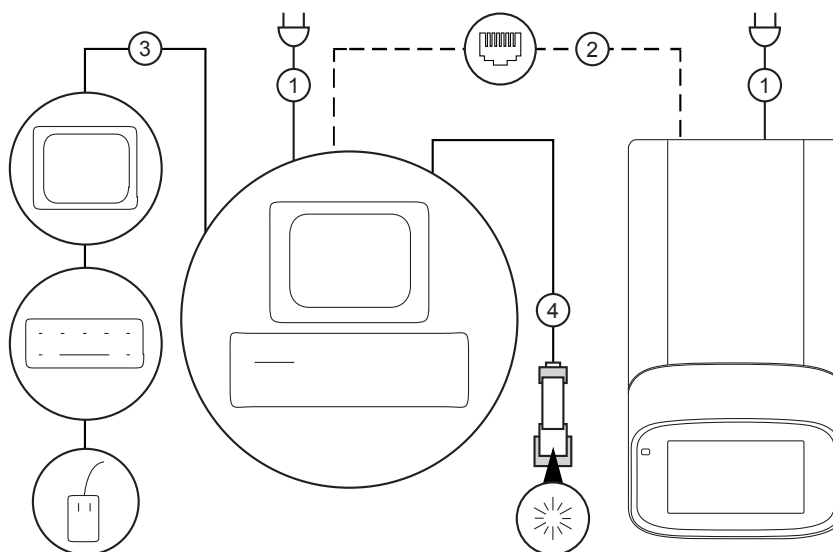
7. If your network requires advanced TCP/IP setup (such as WINS), define the settings:
- a. Click **Advanced** in the Internet Protocol (TCP/IP) Properties dialog box.
  - b. Define the IP Settings, DNS, and WINS tabs as instructed by your systems administrator, then click **OK**.
8. Close all dialog boxes by clicking **OK**, then re-start the computer.  
The computer is now visible to other computers on the network.

## Instrument and computer connections



**Figure 3** Instrument back panel

- |   |                                     |
|---|-------------------------------------|
| ① USB ports   | ④ RS232 Port – For service use only |
| ② WiFi USB port – Connect USB wireless adapter for wireless network access (ordered separately) | ⑤ Fuse Cover                        |
| ③ Ethernet Port – RJ45 port for 10/100 Mbps Ethernet communication with the instrument          | ⑥ Power Switch                      |
|   | ⑦ Power Port – 100 to 240 VAC       |



**Figure 4** Instrument-to-computer connections

- |   |   |
|---|---|
| ① Detachable power supply cord compatible with local power supply receptacle. | ③ Connection between the computer and the monitor, keyboard, and mouse. |
| ② Connection between the computer and the instrument (direct connection).     | ④ Connection between the computer and the handheld barcode scanner.     |

## Download and install the QuantStudio™ Design and Analysis desktop Software

### Computer requirements for the desktop software

If you purchased a computer provided by Thermo Fisher Scientific, you can install the QuantStudio™ Design and Analysis desktop Software and use it to control the instrument.

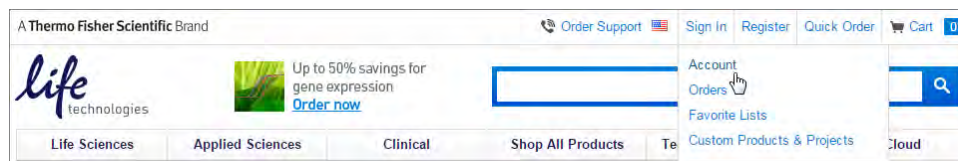
We do not support the use of customer-provided computers to control the instrument.

However, you can install the desktop software on a customer-provided computer and use the software to create templates and analyze data. Minimum requirements for a customer-provided computer are:

- Windows™ 7 operating system (32-bit or 64-bit)
- Pentium® 4 processor or compatible
- 4 GB RAM
- 500 GB hard drive
- Monitor resolution 1280x1024

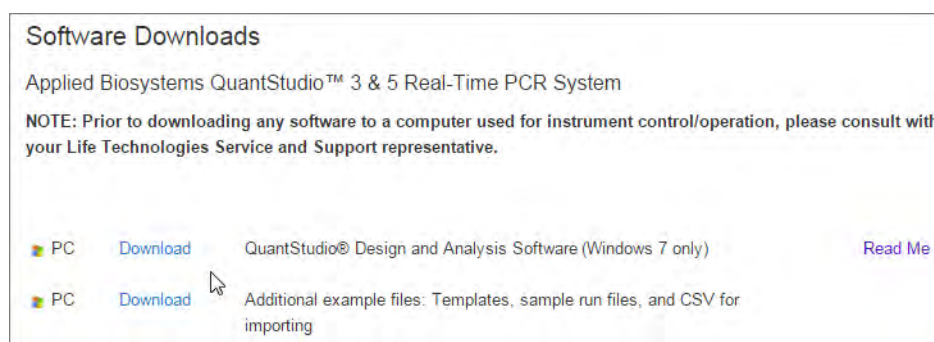
### Download the desktop software

1. Sign in to your account at **thermofisher.com**.



**Note:** If you do not have an account, create one.

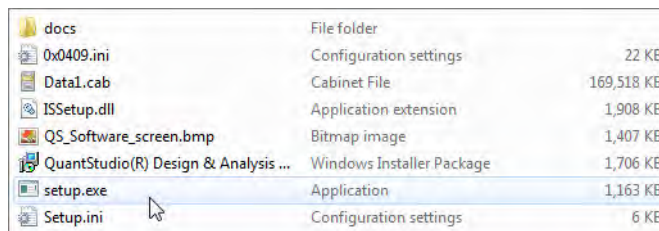
2. Go to <http://www.thermofisher.com/quantstudio3-5softwaredownloads>.
3. Download the software and the example files.



### Install the software

1. Log in to the computer on which you are installing the software with a Windows™ Administrator account.
2. Unzip the downloaded software and example files.

3. Double-click **setup.exe**.



4. Follow the InstallShield Wizard prompts to install the software.
5. Accept the License Agreement.
6. Select **Typical** as the setup preference, then click **Next**.
7. If you are installing the software on a computer provided by Thermo Fisher Scientific, install the software on the D:\ drive. If you are installing on a customer-provided computer, install the software in your preferred location.



8. Click **Finish**.




## Networking

**IMPORTANT!** This section provides general networking information. It *does not* provide adequate detail to integrate the instrument into all possible network architectures. Because a network may contain advanced features (such as a firewall or network domains), we recommend that you consult a network administrator before connecting the instrument to your laboratory network.

### Supported network configuration options

We support the following direct, LAN (local area network) and Cloud network configurations. Configurations other than those listed are not recommended.

DO NOT connect the High Power USB WiFi Module (Cat. no. A26774) to the instrument if it is connected to a network by an Ethernet cable. Configuring the instrument for both wired and wireless connection can interfere with instrument operation.

Connection	Requirements
<p>Direct</p> 	<ul style="list-style-type: none"> <li>A computer provided by Thermo Fisher Scientific installed with the QuantStudio™ Design and Analysis desktop Software</li> <li>Direct Ethernet connection instrument-to-computer</li> </ul>
<p>Local area network (LAN) connection</p> 	<ul style="list-style-type: none"> <li>A computer provided by Thermo Fisher Scientific installed with the QuantStudio™ Design and Analysis desktop Software</li> <li>Direct Ethernet connection <i>or</i> wireless connection instrument-to-LAN (Wi-Fi module connected to instrument is required for wireless connection)</li> <li>Direct Ethernet connection <i>or</i> wireless connection computer-to-LAN</li> <li>Open network ports: 5353 and 7000</li> </ul> <p>Multiple computers can access the same instrument through the network, but only one computer can start a run at any given time.</p>
<p>Cloud</p> 	<ul style="list-style-type: none"> <li>A Microsoft™ Windows™ or Apple™ Macintosh™ computer with internet connection and web browsing access (for Cloud access only, no instrument control)</li> <li>Direct Ethernet connection <i>or</i> wireless connection instrument-to-Cloud (Wi-Fi module connected to instrument is required for wireless connection)</li> <li>Direct Ethernet connection <i>or</i> wireless connection computer-to-Cloud</li> <li>Open network ports: 5353 and 7000</li> </ul>



## Control and monitor networked instruments

When the instrument is connected to a network:

- Computers on the network that are running the desktop software can control the instrument. Networked instruments can be controlled by only one computer at a time.
- Instruments linked to the Cloud cannot be controlled remotely. However, you can:
  - Remotely access the cloud software to create (and analyze) experiments.
  - From the instrument, download the experiments and start a run.
  - Monitor a run from the Cloud in real time.

## About the Ethernet port

The Ethernet port of the instrument supports:

- Static IP network service with subnet mask, primary and secondary data network service (DNS), and default gateway settings, or dynamic host configuration protocol (DHCP) network service.
- mDNS/DNS for local domains.

**Note:** Because mDNS is limited to direct network connections, an instrument configured for mDNS may not be visible to other nodes that are separated by a router, hub, or another network device.

- IPv4 linklocal (IPv4LL) in the RFC (also known as Automatic Private IP Addressing [APIPA] or Internet Protocol Automatic Configuration [IPAC])

**Note:** When an instrument is set for DHCP, APIPA is automatically enabled, and the instrument provides an IP address when no address is supplied by the DHCP server.

## Firewall ports that must be open

Ports	Condition
80/443	Standard ports for instrument-to-Cloud and computer-to-Cloud connection
mDNS, 7000	Instrument-to-computer connection
mDNS, 5353	Instruments discovery

## Networking guidelines and best practices

- Consult a network administrator before connecting the instrument to a network.
- To enable the full functionality of the software, the computer requires a network connection.
- Open the firewall port for the instruments to be discovered.  
See “Firewall ports that must be open” on page 85 for information on relevant ports to open on the computer and router.
- Observe the restrictions to mDNS and Autodiscovery.  
The instrument supports mDNS but only when the instrument and computer share a direct network connection and are within the same subnet. Network computers that are separated from the instrument by a router, hub, or another network device may not be able to access the instrument by its host name.






- Confirm the uniqueness of the instrument name.
  - The instrument name must be unique within the subnet. The desktop software can automatically discover instruments on the link-local network.
  - The instrument does not test the uniqueness of the instrument name within the subnet when it is set.



# Troubleshooting

Observation	Possible cause	Recommended action
Inconsistent communication between instrument-computer or instrument-Cloud	Instrument is configured for both wired and wireless network connection.	Ensure only one connectivity option is plugged into the instrument (either an Ethernet cable <i>or</i> wireless adapter, but not both).
		Configure for wired <i>or</i> wireless network connection.
	Weak or unstable internet connection, especially if configured for wireless.	Change configuration to wired connection.
		Use a wireless network with a stronger or more consistent signal.
The connection between instrument and computer not recognized	The connection is not fully established.	Power the instrument off, then power on again.
Insufficient disk space message	Insufficient disk space to save a run.	<ol style="list-style-type: none"> <li>1. In the home screen, touch  <b>Settings ▶ Run History ▶ Manage</b>.</li> <li>2. Delete or transfer experiments from the instrument.</li> </ol>
Touchscreen is black	Instrument is in sleep mode.	Touch anywhere on the instrument touchscreen.
	Instrument is not powered on.	If you touch the instrument touchscreen and it remains black, check if the instrument is powered on. The power switch is located on the rear panel of the instrument.
		If the instrument does not power on, check that the power supply is properly connected.
		If the instrument does not power on and the power supply is properly connected, contact Support.
Forgot PIN for instrument profile	Non-administrator forgot instrument profile PIN.	See “Manage all instrument profiles (Administrator only)” on page 71.
	Administrator forgot instrument profile PIN.	Have another administrator reset the PIN for the forgotten-PIN profile (see “Manage all instrument profiles (Administrator only)” on page 71).
		If there is not another administrator profile on the instrument, you must restore factory defaults (see “Restore factory defaults” on page 74).



# Parts and materials

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## Kits, consumables, and accessories

The following kits, consumables, and reagents are used with the QuantStudio™ 3 and 5 Systems.

Unless otherwise indicated, all materials are available through **thermofisher.com**.

**Note:** Store ROI/Uniformity, Background, Dye, and RNase P plates at –20°C and use them by the expiration date on the packaging. All other consumables can be stored at room temperature.

## 96-Well (0.2-mL) consumables

Consumable	Contents	Cat. no.
MicroAmp™ Optical 8-Cap Strip	300 strips	4323032
MicroAmp™ Optical 8-Tube Strip (0.2 mL)	125 strips	4316567
MicroAmp™ Optical Tube without Cap (0.2 mL)	2000 tubes	N8010933
MicroAmp™ 96-Well Tray/Retainer Set (blue) (for 0.2 mL)	10 sets	4381850
MicroAmp™ Optical 96-Well Reaction Plate (0.2 mL)	10 plates	N8010560
	500 plates	4316813
MicroAmp™ EnduraPlate™ Optical 96-Well Reaction Plate with Barcode (blue) (0.2 mL)	20 plates	4483343
MicroAmp™ Optical Adhesive Film Kit	1 kit	4313663



Calibration or instrument verification plate	Cat. no.
96-Well Region of Interest (ROI) and Background Plates (2 plates)	4432364
QuantStudio™ 3 or 5 10-Dye Spectral Calibration Kit, 96-Well 0.2-mL	A26343
96-Well 0.2-mL Spectral Calibration Plate 1 (containing FAM™, VIC™, ROX™, and SYBR™ dyes)	A26331
96-Well 0.2-mL Spectral Calibration Plate 2 (containing ABY™, JUN™, and MUSTANG PURPLE™ dyes)	A26332
96-Well 0.2-mL Spectral Calibration Plate 3 (containing TAMRA™, NED™, and Cy <sup>fi</sup> 5 dyes)	A26333
96-Well 0.2-mL TaqMan™ RNase P Instrument Verification Plate	4432382

## 384-well consumables

Consumable	Contents	Cat. no.
MicroAmp™ Optical 384-Well Reaction Plate with Barcode	50 plates	4309849
	500 plates	4326270
	1000 plates	4343814
MicroAmp™ EnduraPlate™ Optical 384-Well Reaction Plate with Barcode (clear)	20 plates	4483285
	500 plates	4483273
MicroAmp™ Optical Adhesive Film Kit	1 kit	4313663

Calibration or instrument verification plate	Cat. no.
384-Well Region of Interest (ROI) and Background Plates (2 plates)	4432320
QuantStudio™ 3 or 5 10-Dye Spectral Calibration Kit, 384-Well	A26341
384-Well Spectral Calibration Plate 1 (containing FAM™, VIC™, ROX™, TAMRA™, and SYBR™ dyes)	A26334
384-Well Spectral Calibration Plate 2 (containing ABY™, JUN™, MUSTANG PURPLE™, NED™, and Cy <sup>fi</sup> 5 dyes)	A26335
384-Well TaqMan™ RNase P Instrument Verification Plate	4455280



## 96-Well Fast (0.1-mL) consumables

Consumable	Contents	Cat. no.
MicroAmp™ Optical 8-Cap Strip	300 strips	4323032
MicroAmp™ Optical Fast 8-Tube Strip (0.1 mL)	125 strips	4358293
MicroAmp™ Optical Fast Tube with Cap (0.1 mL)	1000 tubes	4358297
MicroAmp™ 96-Well Tray (blue) (for 0.1 mL)	10 trays	4379983
MicroAmp™ Optical 96-Well Fast Reaction Plate (0.1 mL)	10 plates	4346907
MicroAmp™ EnduraPlate™ Optical 96-Well Fast Reaction Plate with Barcode (clear) (0.1 mL)	20 plates	4481194
	500 plates	4483494
MicroAmp™ Optical Adhesive Film Kit	1 kit	4313663

Calibration or instrument verification plate	Cat. no.
96-Well Fast Region of Interest (ROI) and Background Plates (2 plates)	4432426
QuantStudio™ 3 or 5 10-Dye Spectral Calibration Kit, 96-Well 0.1-mL	A26342
96-Well 0.1-mL Spectral Calibration Plate 1 (containing FAM™, VIC™, ROX™, and SYBR™ dyes)	A26336
96-Well 0.1-mL Spectral Calibration Plate 2 (containing ABY™, JUN™, and MUSTANG PURPLE™ dyes)	A26337
96-Well 0.1-mL Spectral Calibration Plate 3 (containing TAMRA™, NED™, and Cy <sup>fi</sup> 5 dyes)	A26340
96Well Fast TaqMan™ RNase P Instrument Verification Plate	4351979



## QuantStudio™ 3 and 5 Systems accessories

Accessory	Contents	Cat. no.
MicroAmp™ Multi-Removal Tool	1 tool	4313950
MicroAmp™ Cap Installing Tool (handle style)	1 tool	4330015
MicroAmp™ Optical Adhesive Film Kit	1 kit	4313663
MicroAmp™ Optical Adhesive Film	25 films	4360954
	100 films	4311971
MicroAmp™ Adhesive Film Applicator	5 applicators	4333183
Real Time PCR Grade Water	10 × 1.5 mL tubes	AM9935
Handheld Barcode Scanner	1 scanner	448842
High Power USB WiFi Module	1 module	A26774

## General-use materials and consumables

The following general-use materials and consumables are required to calibrate, maintain, and operate the instrument. Unless indicated otherwise, all materials shown below are available from major laboratory suppliers (MLS).

Material/consumable	Source
Bleach, 10% solution	MLS
Centrifuge with 96-well plate buckets	MLS
Cotton or nylon swabs and lint-free cloths	MLS
Ethanol, 95% solution	MLS
Optical clear adhesive film for PCR	MLS
Pipettors, 100-µL and 200-µL (with pipette tips)	MLS
Powder-free gloves	MLS
Safety glasses	MLS
Screwdriver, flathead	MLS
Tissue, lint-free	MLS
Deionized water	MLS





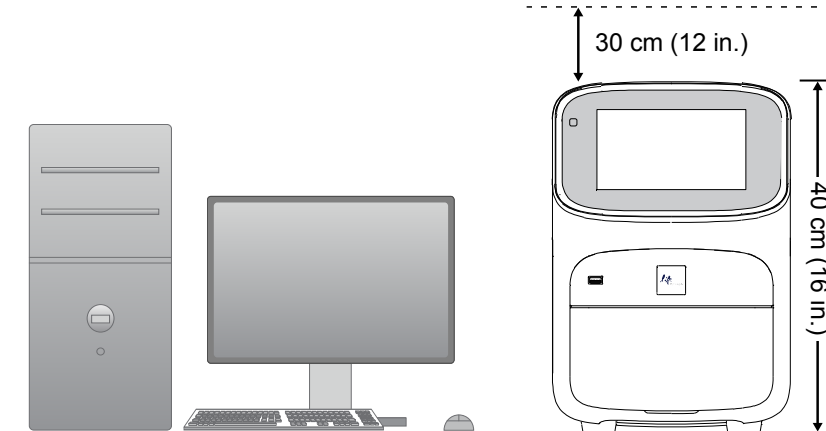
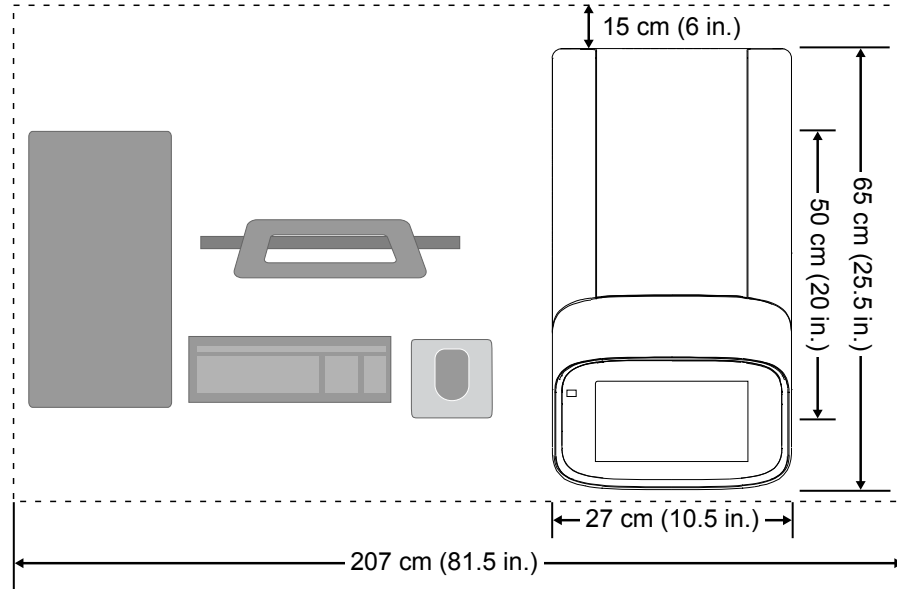
# Instrument specification and layout

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■ Electrical requirements .....	94
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**Note:** For information on instrument components and connections, see “Instrument and computer connections” on page 81.

## Configured system dimensions

Allow space for the configured instrument. A typical setup is shown below (dimensions are rounded to nearest unit).



## Instrument clearances

During instrument setup and maintenance, it is necessary to access the back of the instrument. If the back of the instrument faces a wall, it will be necessary to have enough space to rotate the instrument on the bench for access.

**IMPORTANT!** For safety, the power outlet used for powering the instrument must be accessible at all times.

Component	Top	Front	Sides	Back
QuantStudio™ 3 and 5 Real-Time PCR Systems	30.5 cm (12 in.)	30.5 cm (12 in.)	15.25 cm (6 in.)	15.25 cm (6 in.)
Computer <i>(Optional)</i>	—	15.25 cm (6 in.)	—	15.25 cm (6 in.)

## Electrical requirements



**WARNING!** For safety, the power outlet used for powering the instrument must be accessible at all times. See “Instrument clearances” for information about the space needed between the wall and the instrument. In case of emergency, you must be able to immediately disconnect the main power supply to all the equipment. Allow adequate space between the wall and the equipment so that the power cords can be disconnected in case of emergency.

- Electric receptacle with grounding capability
- Maximum power dissipation: 960 W (approximate, not including computer and monitor)
- Mains AC line voltage tolerances must be up to  $\pm 10$  percent of nominal voltage

Device	Rated voltage	Circuit required	Rated frequency	Rated power
QuantStudio™ 3 and 5 Systems	100–240 $\pm 10\%$ VAC <sup>[1]</sup>	10 A	50/60 Hz	960 W
Computer (desktop)	100–240 $\pm 10\%$ VAC	10 A	50/60 Hz	125 VA
Monitor				65 VA
Computer (laptop)	100–240 $\pm 10\%$ VAC	10 A	50/60 Hz	90 VA

<sup>[1]</sup> If the supplied power fluctuates beyond the rated voltage, a power line regulator may be required. High or low voltages can adversely affect the electronic components of the instrument.



## Environmental requirements

Table 2 Environmental requirements

Condition	Acceptable range
Installation site	Indoor use only
Electromagnetic interference	Do not use this device in close proximity to sources of strong electromagnetic radiation (for example, unshielded intentional RF sources). Strong electromagnetic radiation may interfere with the proper operation of the device.
Altitude	Between sea level and 2000 m (6500 ft.) above sea level
Operating conditions	<ul style="list-style-type: none"> <li>Temperature: 15 to 30°C (60 to 85°F)</li> </ul> <p><b>Note:</b> The room temperature must not fluctuate more than <math>\pm 2^\circ\text{C}</math> over a 2-hour period.</p> <ul style="list-style-type: none"> <li>Humidity: 15–80% relative humidity (noncondensing)</li> </ul>
Thermal output	During operation, the net thermal output, based on the actual current draw of the instrument, is expected to be approximately 960 W (3275 Btu/h).
Vibration	Ensure that the instrument is not adjacent to strong vibration sources, such as a centrifuge, pump, or compressor. Excessive vibration will affect instrument performance.
Pollution degree	<p>The instrument has a Pollution Degree rating of II. The instrument may only be installed in an environment that has nonconductive pollutants such as dust particles or wood chips. Typical environments with a Pollution Degree II rating are laboratories and sales and commercial areas.</p> <p>The noise output of the instrument is <math>\leq 60</math> dB when running.</p>
Other conditions	<p>Ensure the instrument is located away from any vents that could expel particulate material onto the instrument components.</p> <p>Avoid placing the instrument and computer adjacent to heaters, cooling ducts, or in direct sunlight.</p>

## Network requirements

The instrument:

- Is factory-configured for IPv4 TCP/IP communication and includes a fast Ethernet adapter (10/100 Mbps) with an RJ45-type connector for integrating the device into a local area network (LAN).
- Can alternatively be configured for wireless networking (wireless dongle required, sold separately as an optional accessory).

The instrument should be configured for *either* wired or wireless networking, not both.



If a field service representative is to install your instrument:

- If the instrument will be connected to a LAN, an active, tested network jack must be in place before the scheduled installation date.
- A representative from your information technologies department must be available during the installation to help connect the instrument to your network.

**Required materials:**


- Wired: CAT6 Ethernet cable of sufficient length with RJ45 connectors (for a 1000 Mbps network connection or a CAT5 for a 100 Mbps connection)  
*or*
- Wireless: 802.11b/g/n Single-Band Wireless Dongle (Cat. no. A26774, ordered separately)



# Safety

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 **WARNING! GENERAL SAFETY.** Using this product in a manner not specified in the user documentation may result in personal injury or damage to the instrument or device. Ensure that anyone using this product has received instructions in general safety practices for laboratories and the safety information provided in this document.








- Before using an instrument or device, read and understand the safety information provided in the user documentation provided by the manufacturer of the instrument or device.
  - Before handling chemicals, read and understand all applicable Safety Data Sheets (SDSs) and use appropriate personal protective equipment (gloves, gowns, eye protection, etc). To obtain SDSs, see the “Documentation and Support” section in this document.
-










## Symbols on this instrument




Symbols may be found on the instrument to warn against potential hazards or convey important safety information. In this document, the hazard symbol is used along with one of the following user attention words:

- **CAUTION!** – Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
- **WARNING!** – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
- **DANGER!** – Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

Symbol	English	Français
	Caution, risk of danger Consult the manual for further safety information.	Attention, risque de danger Consulter le manuel pour d'autres renseignements de sécurité.
	Caution, risk of electrical shock	Attention, risque de choc électrique
	Moving parts	Parties mobiles
	Caution, hot surface	Attention, surface chaude
	Potential biohazard	Danger biologique potentiel
	Ultraviolet light	Rayonnement ultraviolet
	Potential slipping hazard	Danger de glisser potentiel
I	On	On (marche)
O	Off	Off (arrêt)
ⓘ	On/Off	On/Off (marche/arrêt)
⏻	Standby	En attente



Symbol	English	Français
	Earth (ground) terminal	Borne de (mise à la) terre
	Protective conductor terminal (main ground)	Borne de conducteur de protection (mise à la terre principale)
	Terminal that can receive or supply alternating current or voltage	Borne pouvant recevoir ou envoyer une tension ou un courant de type alternatif
	Terminal that can receive or supply alternating or direct current or voltage	Borne pouvant recevoir ou envoyer une tension ou un courant continu ou alternatif
	<p>Do not dispose of this product in unsorted municipal waste</p> <p> <b>CAUTION!</b> To minimize negative environmental impact from disposal of electronic waste, do not dispose of electronic waste in unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provision and contact customer service for information about responsible disposal options.</p>	<p>Ne pas éliminer ce produit avec les déchets usuels non soumis au tri sélectif.</p> <p> <b>CAUTION!</b> Pour minimiser les conséquences négatives sur l'environnement à la suite de l'élimination de déchets électroniques, ne pas éliminer ce déchet électronique avec les déchets usuels non soumis au tri sélectif. Se conformer aux ordonnances locales sur les déchets municipaux pour les dispositions d'élimination et communiquer avec le service à la clientèle pour des renseignements sur les options d'élimination responsable.</p>

## Conformity symbols

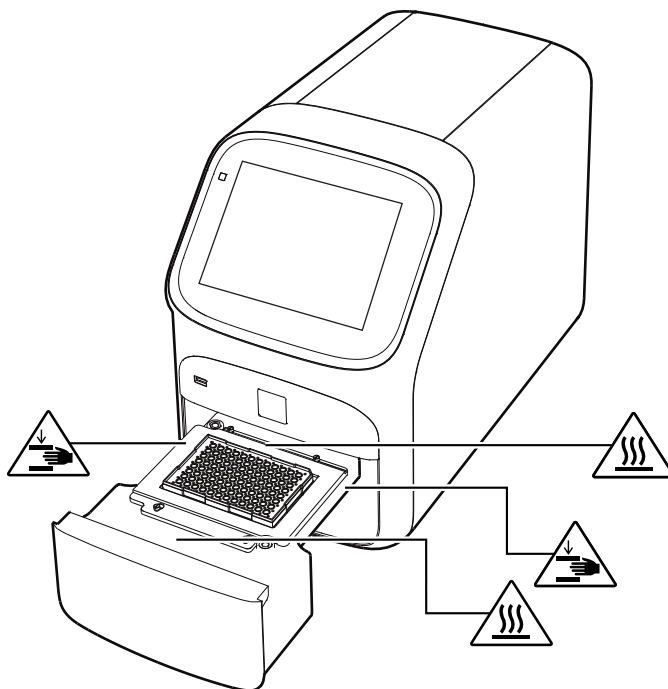
Conformity mark	Description
	Indicates conformity with safety requirements for Canada and U.S.A.
	Indicates conformity with European Union requirements for safety and electromagnetic compatibility.
	Indicates conformity with Australian standards for electromagnetic compatibility.

## Safety alerts on this instrument

Additional text may be used with one of the symbols described above when more specific information is needed to avoid exposure to a hazard. See the following table for safety alerts found on the instrument.

English	French translation
 <b>CAUTION! Hazardous chemicals.</b> Read the Safety Data Sheets (SDSs) before handling.	<b>ATTENTION! Produits chimiques dangereux.</b> Lire les fiches signalétiques (FS) avant de manipuler les produits.
 <b>CAUTION! Hazardous waste.</b> Refer to SDS(s) and local regulations for handling and disposal.	<b>ATTENTION! Déchets dangereux.</b> Lire les fiches signalétiques (FS) et la réglementation locale associées à la manipulation et à l'élimination des déchets.

### Location of safety labels on the instrument



## Safety information for instruments not manufactured by Thermo Fisher Scientific

Some of the accessories provided as part of the instrument system are not designed or built by Thermo Fisher Scientific. Consult the manufacturer's documentation for the information needed for the safe use of these products.

### Instrument safety

#### General



**CAUTION! Do not remove instrument protective covers.** If you remove the protective instrument panels or disable interlock devices, you may be exposed to serious hazards including, but not limited to, severe electrical shock, laser exposure, crushing, or chemical exposure.



**CAUTION! Solvents and Pressurized fluids.** Wear eye protection when working with any pressurized fluids. Use caution when working with any polymeric tubing that is under pressure:

- Extinguish any nearby flames if you use flammable solvents.
- Do not use polymeric tubing that has been severely stressed or kinked.
- Do not use polymeric tubing with tetrahydrofuran or nitric and sulfuric acids.
- Be aware that methylene chloride and dimethyl sulfoxide cause polymeric tubing to swell and greatly reduce the rupture pressure of the tubing.
- Be aware that high solvent flow rates (~40mL/min) may cause a static charge to build up on the surface of the tubing and electrical sparks may result.

## Physical injury



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**CAUTION! Moving and Lifting Injury.** The instrument is to be moved and positioned only by the personnel or vendor specified in the applicable site preparation guide. Improper lifting can cause painful and permanent back injury.

Things to consider before lifting or moving the instrument or accessories:

- Depending on the weight, moving or lifting may require two or more persons.
- If you decide to lift or move the instrument after it has been installed, do not attempt to do so without the assistance of others, the use of appropriate moving equipment, and proper lifting techniques.
- Ensure you have a secure, comfortable grip on the instrument or accessory.
- Make sure that the path from where the object is to where it is being moved is clear of obstructions.
- Do not lift an object and twist your torso at the same time. Keep your spine in a good neutral position while lifting with your legs.
- Participants should coordinate lift and move intentions with each other before lifting and carrying.
- For smaller packages, rather than lifting the object from the packing box, carefully tilt the box on its side and hold it stationary while someone else slides the contents out of the box.



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**CAUTION! Moving Parts.** Moving parts can crush, pinch and cut. Keep hands clear of moving parts while operating the instrument. Disconnect power before servicing.

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**WARNING!** Do not attempt to lift or move the instrument without the assistance of others. Use appropriate moving equipment and proper lifting technique, improper lifting may result in serious injury.

---

## Electrical



**WARNING! Fuse Installation.** Before installing the instrument, verify that the fuses are properly installed and the fuse voltage matches the supply voltage. Replace fuses only with the type and rating specified for the unit. Improper fuses can damage the instrument wiring system and cause a fire.



**WARNING! Ensure appropriate electrical supply.** For safe operation of the instrument:

- Plug the system into a properly grounded receptacle with adequate current capacity.
- Ensure the electrical supply is of suitable voltage.
- Never operate the instrument with the ground disconnected. Grounding continuity is required for safe operation of the instrument.



**WARNING! Power Supply Line Cords.** Use properly configured and approved line cords for the power supply in your facility.



**WARNING! Disconnecting Power.** To fully disconnect power either detach or unplug the power cord, positioning the instrument such that the power cord is accessible.

## Cleaning and decontamination



**CAUTION! Cleaning and Decontamination.** Use only the cleaning and decontamination methods specified in the manufacturer's user documentation. It is the responsibility of the operator (or other responsible person) to ensure the following requirements are met:

- No decontamination or cleaning agents are used that could cause a HAZARD as a result of a reaction with parts of the equipment or with material contained in the equipment.
- The instrument is properly decontaminated a) if hazardous material is spilled onto or into the equipment, and/or b) prior to having the instrument serviced at your facility or sending the instrument for repair, maintenance, trade-in, disposal, or termination of a loan (decontamination forms may be requested from customer service).
- Before using any cleaning or decontamination methods (except those recommended by the manufacturer), users should confirm with the manufacturer that the proposed method will not damage the equipment.

## Safety and electromagnetic compatibility (EMC) standards

The instrument design and manufacture complies with the standards and requirements for safety and electromagnetic compatibility as noted in the following table:

**Safety compliance**

Reference	Description
EU Directive 2014/35/EU	European Union “Low Voltage Directive”
IEC 61010-1 EN 61010-1 UL 61010-1 CSA C22.2 No. 61010-1	<i>Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements</i>
IEC 61010-2-010 EN 61010-2-010	<i>Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-010: Particular requirements for laboratory equipment for the heating of materials</i>
IEC 61010-2-081 EN 61010-2-081	<i>Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes</i>

**EMC**

Reference	Description
Directive 2014/30/EU	European Union “EMC Directive”
EN 61326-1/ IEC 61326-1	<i>Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements – Part 1: General Requirements</i>
AS/NZS CISPR 11	<i>Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific, and Medical (ISM) Radiofrequency Equipment</i>
ICES-001, Issue 4	<i>Industrial, Scientific and Medical (ISM) Radio Frequency Generators</i>
FCC Part 15 Subpart B (47 CFR)	<i>U.S. Standard Radio Frequency Devices</i>

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Environmental  
design

Reference	Description
Directive 2012/19/EU	European Union “WEEE Directive” – Waste electrical and electronic equipment
Directive 2011/65/EU	European Union “RoHS Directive” – Restriction of hazardous substances in electrical and electronic equipment
Directive 2006/66/EC	European Union “Battery Directive”

## Chemical safety



**WARNING! GENERAL CHEMICAL HANDLING.** To minimize hazards, ensure laboratory personnel read and practice the general safety guidelines for chemical usage, storage, and waste provided below, and consult the relevant SDS for specific precautions and instructions:

- Read and understand the Safety Data Sheets (SDSs) provided by the chemical manufacturer before you store, handle, or work with any chemicals or hazardous materials. To obtain SDSs, see the “Documentation and Support” section in this document.
- Minimize contact with chemicals. Wear appropriate personal protective equipment when handling chemicals (for example, safety glasses, gloves, or protective clothing).
- Minimize the inhalation of chemicals. Do not leave chemical containers open. Use only with adequate ventilation (for example, fume hood).
- Check regularly for chemical leaks or spills. If a leak or spill occurs, follow the manufacturer's cleanup procedures as recommended in the SDS.
- Handle chemical wastes in a fume hood.
- Ensure use of primary and secondary waste containers. (A primary waste container holds the immediate waste. A secondary container contains spills or leaks from the primary container. Both containers must be compatible with the waste material and meet federal, state, and local requirements for container storage.)
- After emptying a waste container, seal it with the cap provided.
- Characterize (by analysis if necessary) the waste generated by the particular applications, reagents, and substrates used in your laboratory.
- Ensure that the waste is stored, transferred, transported, and disposed of according to all local, state/provincial, and/or national regulations.
- **IMPORTANT!** Radioactive or biohazardous materials may require special handling, and disposal limitations may apply.



**WARNING! HAZARDOUS WASTE (from instruments).** Waste produced by the instrument is potentially hazardous. Follow the guidelines noted in the preceding General Chemical Handling warning.



**WARNING! 4L Reagent and Waste Bottle Safety.** Four-liter reagent and waste bottles can crack and leak. Each 4-liter bottle should be secured in a low-density polyethylene safety container with the cover fastened and the handles locked in the upright position.

## Biological hazard safety



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**WARNING! Potential Biohazard.** Depending on the samples used on this instrument, the surface may be considered a biohazard. Use appropriate decontamination methods when working with biohazards.

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**WARNING! BIOHAZARD.** Biological samples such as tissues, body fluids, infectious agents, and blood of humans and other animals have the potential to transmit infectious diseases. All work should be conducted in properly equipped facilities using the appropriate safety equipment (for example, physical containment devices). Safety equipment also may include items for personal protection, such as gloves, coats, gowns, shoe covers, boots, respirators, face shields, safety glasses, or goggles. Individuals should be trained according to applicable regulatory and company/ institution requirements before working with potentially biohazardous materials. Follow all applicable local, state/provincial, and/or national regulations. The following references provide general guidelines when handling biological samples in laboratory environment.

- U.S. Department of Health and Human Services, *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, 5th Edition, HHS Publication No. (CDC) 21-1112, Revised December 2009; found at:  
[www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf](http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf)
  - World Health Organization, *Laboratory Biosafety Manual*, 3rd Edition, WHO/CDS/CSR/LYO/2004.11; found at:  
[www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf](http://www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf)
-

# Documentation and support


## Related documentation

Document	Publication number	Description
<i>QuantStudio™ 3 and 5 Real-Time PCR Systems Installation, Use, and Maintenance Guide</i>	MAN0010407	Describes the QuantStudio™ 3 and 5 Real-Time PCR Systems hardware and software and provides information on preparing, using, maintaining, and troubleshooting the system.
<i>QuantStudio™ Real-Time PCR System Help</i>	MAN0010422	Describes the QuantStudio™ 3 and 5 Real-Time PCR Systems touchscreen and provides procedures for configuration, calibration, and performing a run.
<i>QuantStudio™ Design and Analysis desktop Software Command-Line Application Guide</i>	MAN0010409	Describes how to use the command-line interface of the QuantStudio™ Design and Analysis desktop Software and provides the procedure to automate the creation of new experiment files and export data from existing files.
<i>QuantStudio™ Design and Analysis desktop Software User Guide</i>	MAN0010408	Describes how to perform the six different experiments on the QuantStudio™ Design and Analysis desktop Software
<i>QuantStudio™ Design and Analysis desktop Software Help</i>	MAN0010415	Describes the QuantStudio™ Design and Analysis desktop Software and provides procedures for common tasks.
<i>SAE Admin Console Help</i>	MAN0010417	Describes the Security, Audit, and e-Signature (SAE) Administrator Console and provides procedures for common tasks.
<i>SAE Admin Console User Guide</i>	MAN0010410	Describes how to use the Security, Audit, and e-Signature (SAE) Administrator Console.

Document	Publication number	Description
<i>QuantStudio™ Design and Analysis cloud Software Help</i>	MAN0010414	Describes the QuantStudio™ Design and Analysis cloud Software and provides procedures for common tasks.
<i>QuantStudio™ 3 and 5 Real-Time PCR Systems Site Preparation Guide</i>	MAN0010405	Explains how to prepare your site to receive and install the QuantStudio™ 3 and 5 Real-Time PCR Systems. Intended for personnel who schedule, manage, and perform the tasks required to prepare the site for installation of the QuantStudio™ 3 and 5 Real-Time PCR Systems.

**Note:** For additional documentation, see “Customer and technical support” on page 108.

## Obtain information from the Help system

The instrument has a Help system that describes how to use each feature of the touchscreen. Touch  on the instrument touchscreen to access the Help system.

## Customer and technical support

Visit [thermofisher.com/support](https://thermofisher.com/support) for the latest in services and support, including:

- Worldwide contact telephone numbers
- Product support, including:
  - Product FAQs
  - Software, patches, and updates
- Order and web support
- Product documentation, including:
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

**Note:** For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **[www.thermofisher.com/us/en/home/global/terms-and-conditions.html](http://www.thermofisher.com/us/en/home/global/terms-and-conditions.html)**. If you have any questions, please contact Life Technologies at **[www.thermofisher.com/support](http://www.thermofisher.com/support)**.

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[thermofisher.com](http://thermofisher.com)

16 December 2015

**ThermoFisher**  
S C I E N T I F I C

# MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit

## INSTRUCTIONS FOR USE

**Catalog Number** A48383

**Publication Number** MAN0019746

**Revision** A.0



For In Vitro Diagnostic Use.

**ThermoFisher**  
S C I E N T I F I C



Thermo Fisher Scientific Baltics UAB | V.A. Graiciuno 8, LT-02241 | Vilnius, Lithuania

For descriptions of symbols on product labels or product documents, go to [thermofisher.com/symbols-definition](https://thermofisher.com/symbols-definition).

The customer is responsible for compliance with regulatory requirements that pertain to their procedures and uses of the instrument.

The information in this guide is subject to change without notice.

**DISCLAIMER:** TO THE EXTENT ALLOWED BY LAW, THERMO FISHER SCIENTIFIC INC. AND/OR ITS AFFILIATE(S) WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING YOUR USE OF IT.

**Revision history:** Pub. No. MAN0019746

Revision	Date	Description
A.0	20 November 2020	New document.

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## Intended use

MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit is a magnetic bead technology-based nucleic acid purification kit intended for the isolation and purification of viral RNA and DNA from human nasopharyngeal swabs. The kit is intended for use by qualified and trained clinical laboratory personnel specifically instructed and trained in the techniques of magnetic bead purification, either manual or automated, and *in vitro* diagnostic procedures.

## Product information

MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit (Cat. No. A48383) is specifically designed to recover RNA and DNA from viral particles contained in viral transport media (VTM). The kit utilizes MagMAX™ magnetic-bead technology, ensuring reproducible recovery of high-quality nucleic acid.

This product is intended for *in-vitro* diagnostic use and includes the following features:

- Automated workflow using the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head allows for 96 nasopharyngeal swab specimens to be processed in <30 minutes
- Protocol options support an automated workflow or a manual workflow
- Flexible protocol accommodates sample volume inputs from 200 to 400 µL of viral transport medium
- No need for carrier RNA
- Elution volume of 50 µL



## Contents and storage

The MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit contains sufficient reagents for 1,000 reactions with 400 µL volume input or 2,000 reactions with 200 µL volume input.

Component	Amount	Storage
Binding Solution	550 mL	15°C to 25°C
Wash Solution	1,000 mL	
Binding Beads	20 mL	
Proteinase K	10 mL	
Elution Buffer	100 mL	

## Required materials not supplied

Unless otherwise indicated, all materials are available through [thermofisher.com](https://www.thermofisher.com). "MLS" indicates that the material is available from [fisherscientific.com](https://www.fisherscientific.com) or another major laboratory supplier.

Catalog numbers that appear as links open the web pages for those products.

Item	Source
<b>Automated nucleic acid extraction system and materials</b>	
KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head	<a href="#">5400630</a>
KingFisher™ Flex 96 Deep-Well Heating Block	24075430
KingFisher™ Deep-Well 96 Plate	<a href="#">95040450</a> , A48305, A48424, 95040455
96-well plate for the tip comb, one of the following: <ul style="list-style-type: none"> <li>KingFisher™ 96 KF microplate</li> <li>Tip Comb Presenting Plate for KF 96</li> <li>Nunc™ MicroWell™ 96-Well Microplate, Flat Bottom</li> <li>Nunc™ MicroWell™ 96-Well Microplate, barcoded</li> <li>ABgene™ 96-Well Polypropylene Storage Microplate</li> <li>ABgene™ 96-Well 1.2-mL Polypropylene Deepwell Storage Plate</li> <li>Nunc™ F96 MicroWell™ Black Polystyrene Plate</li> <li>Nunc™ F96 MicroWell™ White Polystyrene Plate</li> <li>KingFisher™ Deep-Well 96 Plate</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">97002540</a></li> <li>267600</li> <li>167008</li> <li>269787</li> <li>AB0796</li> <li><a href="#">AB1127</a></li> <li>137101</li> <li>136101</li> <li><a href="#">95040450</a>, A48305, A48424, 95040455</li> </ul>
KingFisher™ 96 tip comb for DW magnets	97002534, A48438, A48414

(continued)

Item	Source
<b>Manual nucleic acid extraction system and materials</b>	
Magnetic Stand-96	AM10027 AM10050
Compact Digital Microplate Shaker	88882005
Incubator capable of reaching 65°C with slatted shelves	MLS
KingFisher™ Deep-Well 96 Plate	95040450, A48305, A48424, 95040455
Standard 96-well plate for the eluate, one of the following: <ul style="list-style-type: none"> <li>KingFisher™ 96 KF microplate</li> <li>MicroAmp™ Fast Optical 96-Well Reaction Plate with Barcode, 0.1 mL</li> <li>MicroAmp™ Fast Optical 96-Well Reaction Plate, 0.1 mL</li> <li>MicroAmp™ Optical 96-Well Reaction Plate with Barcode, 0.2 mL</li> <li>MicroAmp™ Optical 96-Well Reaction Plate, 0.2 mL</li> </ul>	<ul style="list-style-type: none"> <li>97002540</li> <li>4346906, 4366932</li> <li>4346907</li> <li>4306737, 4326659</li> <li>N8010560, 4316813</li> </ul>
MicroAmp™ Clear Adhesive Film	4306311
<b>Equipment</b>	
Laboratory mixer, vortex or equivalent	MLS
Single and multichannel adjustable pipettors (1.00 µL to 1,000.0 µL)	MLS
Cold block or ice	MLS
<b>Reagents</b>	
Fisher BioReagents™ Ethanol, Absolute, Molecular Biology Grade <sup>[1]</sup> , or equivalent	BP2818100, BP2818500, BP28184
Nuclease-free Water (not DEPC-Treated)	MLS
(Optional) Extraction control, if required for your assay	See the assay guide for more information
<b>Tubes, plates, and other consumables</b>	
MicroAmp™ Clear Adhesive Film	4306311
MicroAmp™ Adhesive Film Applicator	4333183
Sterile conical tubes for reagent preparation	MLS
Sterile aerosol barrier (filtered) pipette tips	thermofisher.com/pipettetips

<sup>[1]</sup> Available at [fisherscientific.com](https://www.fisherscientific.com).

# 2

## Extract nucleic acid (automated method)

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■ Extract nucleic acid—Automated method (200-μL sample input volume) .....	9
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Automated nucleic acid extraction is performed with the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head using sample volume input of either 200 μL or 400 μL. See your assay documentation for specific sample volume input recommendations.

### Before you begin

- Ensure that you read and understand the information provided in this guide before you begin the extraction procedure.
- Review your assay documentation to determine if an extraction control is recommended to verify the efficacy of the nucleic acid preparation. Follow the extraction control guidelines provided in the assay documentation.
- Determine the number of required reactions based on the number of patient samples to be processed, plus one Negative Control per plate.
- Prepare fresh 80% Ethanol using Ethanol, Absolute, Molecular Biology Grade and Nuclease-free Water (not DEPC-Treated) for the required number of reactions, sufficient for 1 mL per reaction, plus 10% overage.
- Label the short side of each KingFisher™ Deep-Well 96 Plate (4):

Label	Number of plates
Sample plate	1
Wash 1	1
Wash 2	1
Elution plate	1

- Label the short side of the KingFisher™ 96 KF microplate (1):

Label	Number of plates
Tip comb	1

---

**Note:** The following items can be used to hold the tip comb instead of the KingFisher™ 96 KF microplate:

- Tip Comb Presenting Plate for KF 96
  - Nunc™ MicroWell™ 96-Well Microplate, Flat Bottom
  - Nunc™ MicroWell™ 96-Well Microplate, barcoded
  - ABgene™ 96-Well Polypropylene Storage Microplate
  - ABgene™ 96-Well 1.2-mL Polypropylene Deepwell Storage Plate
  - Nunc™ F96 MicroWell™ Black Polystyrene Plate
  - Nunc™ F96 MicroWell™ White Polystyrene Plate
  - KingFisher™ Deep-Well 96 Plate
- 
- Mark the Negative Control well on the plate.

## Extract nucleic acid—Automated method (200- $\mu$ L sample input volume)

### Set up the instrument (200- $\mu$ L sample input volume)

1. Ensure that the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head is set up with the KingFisher™ Flex 96 Deep-Well Heating Block.

---

**IMPORTANT!** Failure to use the proper magnetic head and heat block results in lower yields and potential harm to the instrument.

---

2. Ensure that the **MVP\_2Wash\_200\_Flex** program has been downloaded from the MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit product page at [www.thermofisher.com](http://www.thermofisher.com) and loaded onto the instrument.

## Prepare the processing plates (200-µL sample input volume)

**Note:** During the wash steps, the Wash Solution may develop inert white or brown particulates that float in solution. This is not a cause for concern and does not negatively affect performance.

Prepare the processing plates according to the following table. Cover the plates with a temporary seal (such as MicroAmp™ Clear Adhesive Film), then store at room temperature for up to 1 hour while you set up the sample plate.

Plate ID	Plate position	Plate type	Reagent	Volume per well
Wash 1 Plate	2	KingFisher™ Deep-Well 96 Plate	Wash Solution	500 µL
Wash 2 Plate	3		80% Ethanol	500 µL
Elution Plate	4		Elution Buffer	50 µL
Tip Comb Plate	5	Place a KingFisher™ 96 tip comb for DW magnets in a KingFisher™ 96 KF microplate or equivalent plate <sup>[1]</sup>		

<sup>[1]</sup> See “Before you begin” on page 8 for equivalent plates.

## Prepare Binding Bead Mix (200-µL sample input volume)

Prepare the required amount of Binding Bead Mix on each day of use.

1. Vortex the Binding Beads to ensure that the bead mixture is homogeneous.
2. For the number of required reactions, prepare the Binding Bead Mix according to the following table:

Component	Volume per well <sup>[1]</sup>
Binding Solution	265 µL
Binding Beads	10 µL
<b>Total volume per well</b>	<b>275 µL</b>

<sup>[1]</sup> Include 10% overage when making the Binding Bead Mix for use with multiple reactions.

3. Mix well by inversion, then store at room temperature.

## Prepare sample plate

1. Invert the Binding Bead Mix 5 times gently to mix, then add 275 µL to each sample well and the Negative Control well in the Sample Plate (KingFisher™ Deep-Well 96 Plate).

**Note:** Remix the Binding Bead Mix by inversion frequently during pipetting to ensure even distribution of beads to all samples or wells. The Binding Bead Mix is viscous, so pipet slowly to ensure that the correct amount is added. DO NOT reuse pipette tips to add Binding Bead Mix to the samples, as the high viscosity will cause variations in the volumes added.

2. Add 200 µL of sample to each sample well.

3. Add 200  $\mu$ L of Nuclease-free Water (not DEPC-Treated) to the Negative Control well.
4. Add 5  $\mu$ L of Proteinase K to each well, including the Negative Control well.
5. (Optional) If using an extraction control, add the required volume to each well, including the Negative Control well. For more information about using an extraction control, see the assay documentation.

---

**Note:** The Proteinase K (see step 4) and extraction control can be pre-mixed on each day of use, then kept on ice. Add the combined required volume of Proteinase K and extraction control to each well of the Sample Plate.

For example, if your assay recommends 5  $\mu$ L of the extraction control per reaction, add 10  $\mu$ L of pre-mixed Proteinase K and extraction control to each well during step 4.

---

## Process the samples (200- $\mu$ L sample input volume)

1. Select the **MVP\_2Wash\_200\_Flex** on the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head.
2. Start the run, then load the prepared plates into position when prompted by the instrument.
3. After the run is complete (~22 minutes after start), immediately remove the Elution Plate from the instrument, then cover the plate with MicroAmp™ Clear Adhesive Film.

---

**IMPORTANT!** To prevent evaporation, seal the plate containing the eluate immediately.

---

The samples are eluted in 50  $\mu$ L of Elution Buffer (see “Prepare the processing plates (200- $\mu$ L sample input volume)” on page 10).

---

**Note:**

- Significant bead carry over may adversely impact RT-PCR performance. If bead carry over is observed, place elution plate on a magnetic stand to pellet the beads, then pipette the eluate to a new 96-well plate for use in real-time PCR. Review real-time PCR results to determine if re-extraction is required.
  - To ensure reliable performance of the KingFisher™ Flex Magnetic Particle Processor, perform preventive maintenance as instructed by the manufacturer.
- 

Place the Elution Plate on ice for immediate use in real-time RT-PCR.

## Extract nucleic acid—Automated method (400-µL sample input volume)

### Set up the instrument

1. Ensure that the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head is set up with the KingFisher™ Flex 96 Deep-Well Heating Block.

---

**IMPORTANT!** Failure to use the proper magnetic head and heat block results in lower yields and potential harm to the instrument.

---

2. Ensure that the **MVP\_2Wash\_400\_Flex** program has been downloaded from the MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit product page at [www.thermofisher.com](http://www.thermofisher.com) and loaded onto the instrument.

### Prepare the processing plates

---

**Note:** During the wash steps, the Wash Solution may develop inert white or brown particulates that float in solution. This is not a cause for concern and does not negatively affect performance.

---

Prepare the processing plates according to the following table. Cover the plates with a temporary seal (such as MicroAmp™ Clear Adhesive Film), then store at room temperature for up to 1 hour while you set up the sample plate.

Plate ID	Plate position	Plate type	Reagent	Volume per well
Wash 1 Plate	2	KingFisher™ Deep-Well 96 Plate	Wash Solution	1,000 µL
Wash 2 Plate	3		80% Ethanol	1,000 µL
Elution Plate	4		Elution Buffer	50 µL
Tip Comb Plate	5	Place a KingFisher™ 96 tip comb for DW magnets in a KingFisher™ 96 KF microplate or equivalent plate <sup>[1]</sup>		

<sup>[1]</sup> See “Before you begin” on page 8 for equivalent plates.



## Prepare Binding Bead Mix (400-µL sample input volume)

Prepare the required amount of Binding Bead Mix on each day of use.

1. Vortex the Binding Beads to ensure that the bead mixture is homogeneous.
2. For the number of required reactions, prepare the Binding Bead Mix according to the following table:

Component	Volume per well <sup>[1]</sup>
Binding Solution	530 µL
Binding Beads	20 µL
<b>Total volume per well</b>	<b>550 µL</b>

<sup>[1]</sup> Include 10% overage when making the Binding Bead Mix for use with multiple reactions.

3. Mix well by inversion, then store at room temperature.

## Prepare sample plate

1. Invert the Binding Bead Mix 5 times gently to mix, then add 550 µL to each sample well and the Negative Control well in the Sample Plate (KingFisher™ Deep-Well 96 Plate).

---

**Note:** Remix the Binding Bead Mix by inversion frequently during pipetting to ensure even distribution of beads to all samples or wells. The Binding Bead Mix is viscous, so pipet slowly to ensure that the correct amount is added. DO NOT reuse pipette tips to add Binding Bead Mix to the samples, as the high viscosity will cause variations in the volumes added.

---

2. Add 400 µL of sample to each sample well.
3. Add 400 µL of Nuclease-free Water (not DEPC-Treated) to the Negative Control well.
4. Add 10 µL of Proteinase K to each well, including the Negative Control well.
5. (Optional) If using an extraction control, add the required volume to each well, including the Negative Control well. For more information about using an extraction control, see the assay documentation.

---

**Note:** The Proteinase K (see step 4) and extraction control can be pre-mixed on each day of use, then kept on ice. Add the combined required volume of Proteinase K and extraction control to each well of the Sample Plate.

For example, if your assay recommends 10 µL of the extraction control per reaction, add 20 µL of pre-mixed Proteinase K and extraction control to each well during step 4.

---

## Process the samples (400-µL sample input volume)

1. Select the **MVP\_2Wash\_400\_Flex** on the KingFisher™ Flex Magnetic Particle Processor with 96 Deep-Well Head.
2. Start the run, then load the prepared plates into position when prompted by the instrument.
3. After the run is complete (~24 minutes after start), immediately remove the Elution Plate from the instrument, then cover the plate with MicroAmp™ Clear Adhesive Film.

---

**IMPORTANT!** To prevent evaporation, seal the plate containing the eluate immediately.

---

The samples are eluted in 50 µL of Elution Buffer (see “Prepare the processing plates” on page 12).

---

**Note:**

- Significant bead carry over may adversely impact RT-PCR performance. If bead carry over is observed, place elution plate on a magnetic stand to pellet the beads, then pipette the eluate to a new 96-well plate for use in real-time PCR. Review real-time PCR results to determine if re-extraction is required.
  - To ensure reliable performance of the KingFisher™ Flex Magnetic Particle Processor, perform preventive maintenance as instructed by the manufacturer.
- 

Place the Elution Plate on ice for immediate use in real-time RT-PCR.



## Extract nucleic acid (manual method)

■ Before you begin .....	15
■ Extract nucleic acid—Manual method (200- $\mu$ L sample input volume) .....	16
■ Extract nucleic acid—Manual method (400- $\mu$ L sample input volume) .....	18

Manual nucleic acid extraction can be performed using sample volume input of either 200  $\mu$ L or 400  $\mu$ L. See your assay documentation for specific sample volume input recommendations.

### Before you begin

- Ensure that you read and understand the information provided in this guide before you begin the extraction procedure.
- Review your assay documentation to determine if an extraction control is recommended to verify the efficacy of the nucleic acid preparation. Follow the extraction control guidelines provided in the assay documentation.
- Determine the number of required reactions based on the number of patient samples to be processed, plus one Negative Control per plate.
- Prepare fresh 80% Ethanol using Ethanol, Absolute, Molecular Biology Grade and Nuclease-free Water (not DEPC-Treated) for the required number of reactions, plus 10% overage.

Sample input volume	Volume of 80% Ethanol per reaction
200 $\mu$ L	0.75 mL
400 $\mu$ L	1.5 mL

- Mark the Negative Control well on the plate.

## Extract nucleic acid—Manual method (200- $\mu$ L sample input volume)

### Prepare Binding Bead Mix (200- $\mu$ L sample input volume)

Prepare the required amount of Binding Bead Mix on each day of use.

1. Vortex the Binding Beads to ensure that the bead mixture is homogeneous.
2. For the number of required reactions, prepare the Binding Bead Mix according to the following table:

Component	Volume per well <sup>[1]</sup>
Binding Solution	265 $\mu$ L
Binding Beads	10 $\mu$ L
<b>Total volume per well</b>	<b>275 <math>\mu</math>L</b>

<sup>[1]</sup> Include 10% overage when making the Binding Bead Mix for use with multiple reactions.

3. Mix well by inversion, then store at room temperature.

### Digest with Proteinase K (200- $\mu$ L sample input volume)

This section provides volumes for the sample plate. Your plate layout will depend on the number of samples you run.

1. Invert the Binding Bead Mix 5 times gently to mix, then add 275  $\mu$ L to each sample well and Negative Control well.

---

**Note:** Remix the Binding Bead Mix by inversion frequently during pipetting to ensure even distribution of beads to all samples or wells. The Binding Bead Mix is viscous, so pipet slowly to ensure that the correct amount is added. DO NOT reuse pipette tips to add Binding Bead Mix to the samples, as the high viscosity will cause variations in the volumes added.

---

2. Add 200  $\mu$ L of sample to each sample well of a KingFisher™ Deep-Well 96 Plate.
3. Add 200  $\mu$ L of Nuclease-free Water (not DEPC-Treated) to the Negative Control well.
4. Add 5  $\mu$ L of Proteinase K to each well, including the Negative Control well.
5. (Optional) If using an extraction control, add the required volume to each well, including the Negative Control well. For more information about using an extraction control, see the assay documentation.

---

**Note:** The Proteinase K (see step 4) and extraction control can be pre-mixed on each day of use, then kept on ice. Add the combined required volume of Proteinase K and extraction control to each well of the Sample Plate.

For example, if your assay recommends 5  $\mu$ L of the extraction control per reaction, add 10  $\mu$ L of pre-mixed Proteinase K and extraction control to each well during step 4.

---

6. Seal the plate with MicroAmp™ Clear Adhesive Film, then shake the sealed plate at 1,050 rpm for 2 minutes.
7. Incubate the sealed plate at 65°C for 5 minutes (ensure the bottom of the plate is uncovered), then shake the plate at 1,050 rpm for 5 minutes.
8. Place the sealed plate on the magnetic stand for 10 minutes or until all of the beads have collected.

## Wash the beads (200-µL sample input volume)

---

**Note:** During the wash steps, the Wash Solution may develop inert white or brown particulates that float in solution. This is not a cause for concern and does not negatively affect performance.

---

1. Keeping the plate on the magnet, carefully remove the cover, then discard the supernatant from each well.

---

**IMPORTANT!** Avoid disturbing the beads.

---

2. Remove the plate from the magnetic stand, then add 500 µL of Wash Solution to each sample.
3. Reseal the plate, then shake at 1,050 rpm for 1 minute.
4. Place the plate back on the magnetic stand for 2 minutes, or until all the beads have collected.
5. Keeping the plate on the magnet, carefully remove the cover, then discard the supernatant from each well.

---

**IMPORTANT!** Avoid disturbing the beads.

---

6. Repeat step 2 to step 5 using 500 µL of 80% Ethanol.
7. Repeat step 2 to step 5 using 250 µL of 80% Ethanol.
8. Dry the beads by shaking the plate (uncovered) at 1,050 rpm for 2 minutes.

## Elute the nucleic acid (200-µL sample input volume)

1. Add 50 µL of Elution Buffer to each sample, then seal the plate with MicroAmp™ Clear Adhesive Film.
2. Shake the sealed plate at 1,050 rpm for 5 minutes.
3. Place the plate in an incubator at 65°C for 10 minutes.
4. Remove the plate from the incubator, then shake the plate at 1,050 rpm for 5 minutes.
5. Place the sealed plate on the magnetic stand for 3 minutes or until clear to collect the beads against the magnets.

6. Keeping the plate on the magnet, carefully remove the seal, transfer the eluates to a fresh standard (not deep-well) 96-well plate, then seal the plate with MicroAmp™ Clear Adhesive Film.

---

**IMPORTANT!** To prevent evaporation, seal the plate containing the eluate immediately after the transfers are complete.

---

**Note:** Significant bead carry over may adversely impact RT-PCR performance. If bead carry over is observed, extend the time on the magnetic stand to further pellet the beads, then pipette the eluate to a new 96-well plate for use in real-time PCR. Review real-time PCR results to determine if re-extraction is required.

---

Place the plate on ice for immediate use in real-time RT-PCR.

## Extract nucleic acid—Manual method (400-µL sample input volume)

### Prepare Binding Bead Mix (400-µL sample input volume)

Prepare the required amount of Binding Bead Mix on each day of use.

1. Vortex the Binding Beads to ensure that the bead mixture is homogeneous.
2. For the number of required reactions, prepare the Binding Bead Mix according to the following table:

Component	Volume per well <sup>[1]</sup>
Binding Solution	530 µL
Binding Beads	20 µL
<b>Total volume per well</b>	<b>550 µL</b>

<sup>[1]</sup> Include 10% overage when making the Binding Bead Mix for use with multiple reactions.

3. Mix well by inversion, then store at room temperature.

### Digest with Proteinase K (400-µL sample input volume)

This section provides volumes for the sample plate. Your plate layout will depend on the number of samples you run.

1. Invert the Binding Bead Mix 5 times gently to mix, then add 550 µL to each sample well and Negative Control well.

---

**Note:** Remix the Binding Bead Mix by inversion frequently during pipetting to ensure even distribution of beads to all samples or wells. The Binding Bead Mix is viscous, so pipet slowly

to ensure that the correct amount is added. DO NOT reuse pipette tips to add Binding Bead Mix to the samples, as the high viscosity will cause variations in the volumes added.

---

2. Add 400 µL of sample to each sample well of a KingFisher™ Deep-Well 96 Plate.
  3. Add 400 µL of Nuclease-free Water (not DEPC-Treated) to the Negative Control well.
  4. Add 10 µL of Proteinase K to each well, including the Negative Control well.
  5. (Optional) If using an extraction control, add the required volume to each well, including the Negative Control well. For more information about using an extraction control, see the assay documentation.
- 

**Note:** The Proteinase K (see step 4) and extraction control can be pre-mixed on each day of use, then kept on ice. Add the combined required volume of Proteinase K and extraction control to each well of the Sample Plate.

For example, if your assay recommends 10 µL of the extraction control per reaction, add 20 µL of pre-mixed Proteinase K and extraction control to each well during step 4.

---

6. Seal the plate with MicroAmp™ Clear Adhesive Film, then shake the sealed plate at 1,050 rpm for 2 minutes.
7. Incubate the sealed plate at 65°C for 5 minutes (ensure the bottom of the plate is uncovered), then shake the plate at 1,050 rpm for 5 minutes.
8. Place the sealed plate on the magnetic stand for 10 minutes or until all of the beads have collected.

## Wash the beads (400-µL sample input volume)

---

**Note:** During the wash steps, the Wash Solution may develop inert white or brown particulates that float in solution. This is not a cause for concern and does not negatively affect performance.

---

1. Keeping the plate on the magnet, carefully remove the cover, then discard the supernatant from each well.
- 

**IMPORTANT!** Avoid disturbing the beads.

---

2. Remove the plate from the magnetic stand, then add 1 mL of Wash Solution to each sample.
  3. Reseal the plate, then shake at 1,050 rpm for 1 minute.
  4. Place the plate back on the magnetic stand for 2 minutes, or until all the beads have collected.
  5. Keeping the plate on the magnet, carefully remove the cover, then discard the supernatant from each well.
- 

**IMPORTANT!** Avoid disturbing the beads.

---

6. Repeat step 2 to step 5 using 1 mL of 80% Ethanol.



7. Repeat step 2 to step 5 using 500  $\mu$ L of 80% Ethanol.
8. Dry the beads by shaking the plate (uncovered) at 1,050 rpm for 2 minutes.

### Elute the nucleic acid (400- $\mu$ L sample input volume)

1. Add 50  $\mu$ L of Elution Buffer to each sample, then seal the plate with MicroAmp™ Clear Adhesive Film.
2. Shake the sealed plate at 1,050 rpm for 5 minutes.
3. Place the plate in an incubator at 65°C for 10 minutes.
4. Remove the plate from the incubator, then shake the plate at 1,050 rpm for 5 minutes.
5. Place the sealed plate on the magnetic stand for 3 minutes or until clear to collect the beads against the magnets.
6. Keeping the plate on the magnet, carefully remove the seal, transfer the eluates to a fresh standard (not deep-well) 96-well plate, then seal the plate with MicroAmp™ Clear Adhesive Film.

---

**IMPORTANT!** To prevent evaporation, seal the plate containing the eluate immediately after the transfers are complete.

---

**Note:** Significant bead carry over may adversely impact RT-PCR performance. If bead carry over is observed, extend the time on the magnetic stand to further pellet the beads, then pipette the eluate to a new 96-well plate for use in real-time PCR. Review real-time PCR results to determine if re-extraction is required.

---

Place the plate on ice for immediate use in real-time RT-PCR.



# Safety



**WARNING! GENERAL SAFETY.** Using this product in a manner not specified in the user documentation may result in personal injury or damage to the instrument or device. Ensure that anyone using this product has received instructions in general safety practices for laboratories and the safety information provided in this document.

- Before using an instrument or device, read and understand the safety information provided in the user documentation provided by the manufacturer of the instrument or device.
- Before handling chemicals, read and understand all applicable Safety Data Sheets (SDSs) and use appropriate personal protective equipment (gloves, gowns, eye protection, and so on). To obtain SDSs, see the “Documentation and Support” section in this document.

## Chemical safety



**WARNING! GENERAL CHEMICAL HANDLING.** To minimize hazards, ensure laboratory personnel read and practice the general safety guidelines for chemical usage, storage, and waste provided below. Consult the relevant SDS for specific precautions and instructions:

- Read and understand the Safety Data Sheets (SDSs) provided by the chemical manufacturer before you store, handle, or work with any chemicals or hazardous materials. To obtain SDSs, see the "Documentation and Support" section in this document.
- Minimize contact with chemicals. Wear appropriate personal protective equipment when handling chemicals (for example, safety glasses, gloves, or protective clothing).
- Minimize the inhalation of chemicals. Do not leave chemical containers open. Use only with sufficient ventilation (for example, fume hood).
- Check regularly for chemical leaks or spills. If a leak or spill occurs, follow the manufacturer cleanup procedures as recommended in the SDS.
- Handle chemical wastes in a fume hood.
- Ensure use of primary and secondary waste containers. (A primary waste container holds the immediate waste. A secondary container contains spills or leaks from the primary container. Both containers must be compatible with the waste material and meet federal, state, and local requirements for container storage.)
- After emptying a waste container, seal it with the cap provided.
- Characterize (by analysis if needed) the waste generated by the particular applications, reagents, and substrates used in your laboratory.
- Ensure that the waste is stored, transferred, transported, and disposed of according to all local, state/provincial, and/or national regulations.
- **IMPORTANT!** Radioactive or biohazardous materials may require special handling, and disposal limitations may apply.

## Biological hazard safety



**WARNING! BIOHAZARD.** Biological samples such as tissues, body fluids, infectious agents, and blood of humans and other animals have the potential to transmit infectious diseases. Conduct all work in properly equipped facilities with the appropriate safety equipment (for example, physical containment devices). Safety equipment can also include items for personal protection, such as gloves, coats, gowns, shoe covers, boots, respirators, face shields, safety glasses, or goggles. Individuals should be trained according to applicable regulatory and company/ institution requirements before working with potentially biohazardous materials. Follow all applicable local, state/provincial, and/or national regulations. The following references provide general guidelines when handling biological samples in laboratory environment.

- U.S. Department of Health and Human Services, *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, 5th Edition, HHS Publication No. (CDC) 21-1112, Revised December 2009; found at:  
<https://www.cdc.gov/labs/pdf/CDC-BiosafetyMicrobiologicalBiomedicalLaboratories-2009-P.pdf>
- World Health Organization, *Laboratory Biosafety Manual*, 3rd Edition, WHO/CDS/CSR/LYO/2004.11; found at:  
[www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf](http://www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf)



**WARNING! Potential Biohazard.** If you use the kit with the automated nucleic extraction workflow, the surface of the KingFisher™ purification system may be considered a biohazard. Use appropriate decontamination methods when working with biohazards.



# Documentation and support

## Related documentation

Document	Publication Number
<i>Thermo Scientific™ KingFisher™ Flex User Manual</i>	N07669

## Customer and technical support

Visit [thermofisher.com/support](http://thermofisher.com/support) for the latest service and support information.

- Worldwide contact telephone numbers
- Product support information
  - Product FAQs
  - Software, patches, and updates
  - Training for many applications and instruments
- Order and web support
- Product documentation
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

---

**Note:** For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

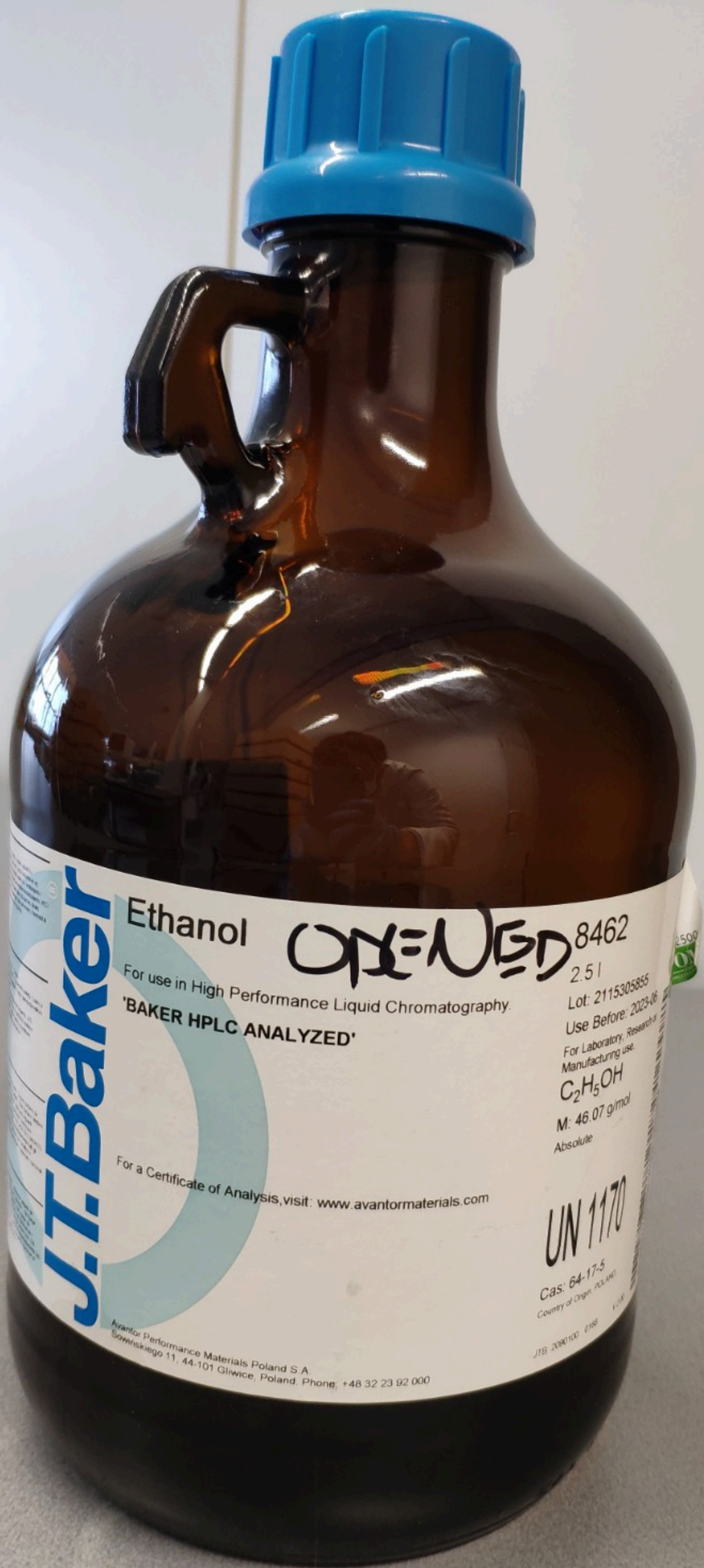
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## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale at [www.thermofisher.com/us/en/home/global/terms-and-conditions.html](http://www.thermofisher.com/us/en/home/global/terms-and-conditions.html). If you have any questions, please contact Life Technologies at [www.thermofisher.com/support](http://www.thermofisher.com/support).







**J.T. Baker**

**Ethanol**

**OPENED 8462**

For use in High Performance Liquid Chromatography.

**'BAKER HPLC ANALYZED'**

2.5 l  
Lot: 2115305855

Use Before: 2023-06  
For Laboratory, Research or  
Manufacturing use.

$C_2H_5OH$   
M: 46.07 g/mol  
Absolute

For a Certificate of Analysis, visit: [www.avantormaterials.com](http://www.avantormaterials.com)

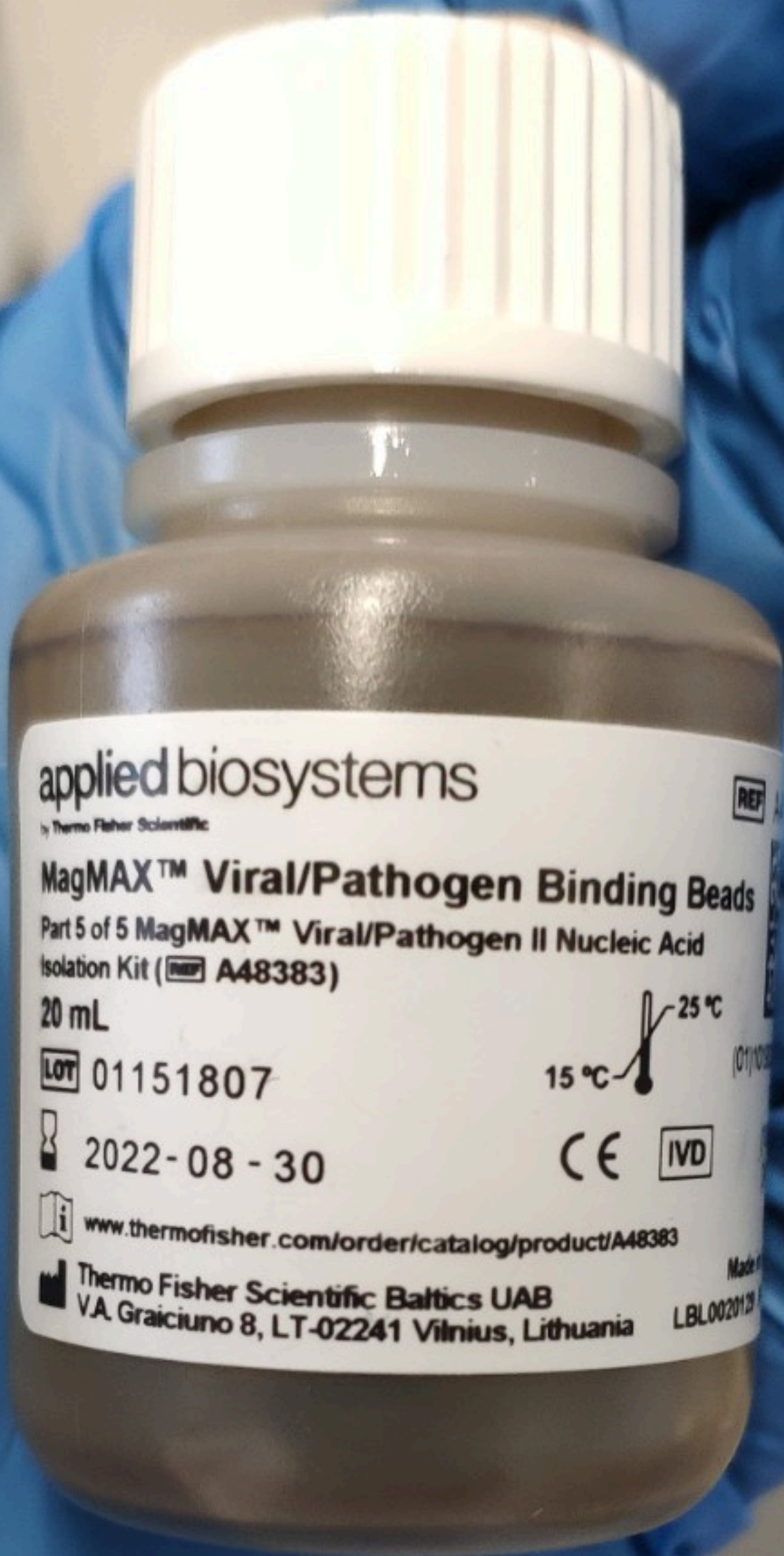
**UN 1170**

Cas: 64-17-5  
Country of Origin: POLAND

Avantor Performance Materials Poland S.A.  
Sowińskiego 11, 44-101 Gliwice, Poland. Phone: +48 32 23 92 000

JTB: 2080100 ©198





applied biosystems

by Thermo Fisher Scientific

**MagMAX™ Viral/Pathogen Binding Beads**

Part 5 of 5 MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit (REF A48383)


20 mL


**LOT** 01151807

**EXP** 2022-08-30

15 °C — 25 °C

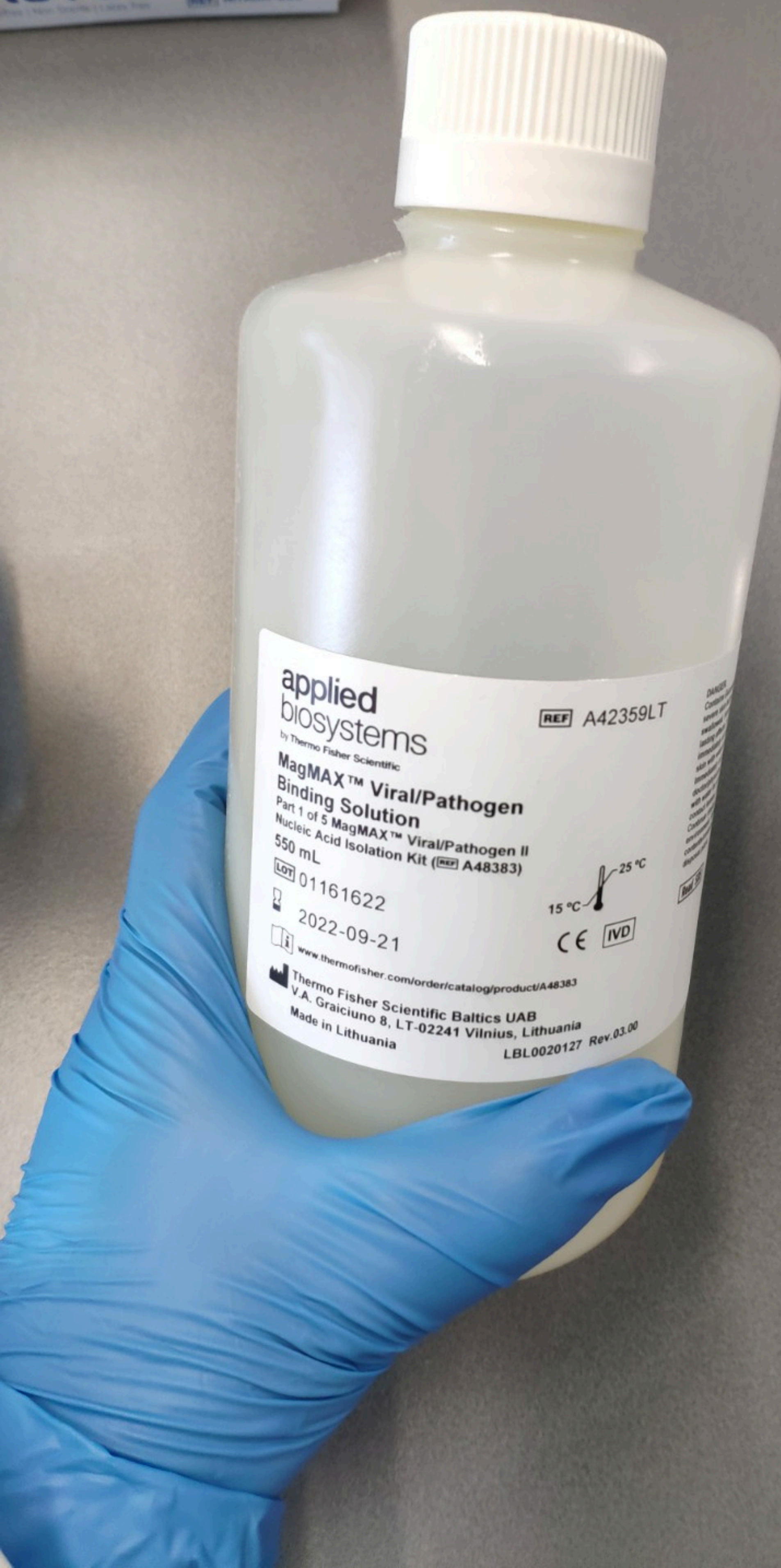
CE IVD

 [www.thermofisher.com/order/catalog/product/A48383](http://www.thermofisher.com/order/catalog/product/A48383)

 Thermo Fisher Scientific Baltics UAB  
V.A. Graiciuno 8, LT-02241 Vilnius, Lithuania

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REF A48099

by Thermo Fisher Scientific

TaqPath™ COVID-19 Control Dilution Buffer

Positive Control Dilution Buffer part of TaqPath™

COVID-19 RT-PCR Kit

Part 3 of 4 of TaqPath COVID-19 CE-IVD RT-PCR Kit (01) 1 0190302 01548 6

(REF A48067) (17) 220301

10 Tubes LOT 2107055 -30°C -10°C (10) 2107055 (240) A48099

CE IVD i 2022-03-01 EC REF Life Technologies Europe B.V.

Life Technologies Corp. Kwartsweg 2, 2665 NN

6055 Sunol Blvd. Bleiswijk, The Netherlands

Pleasanton, CA 94566 USA Read SDS Product of USA

24-hour Medical or Spill Emergency Response (Chemtrec)  
North America +1 866 536 0631 / Other +1 301 431 8585




1-10-21

invitrogen

UltraPure™  
Distilled Water  
DNase/RNase Free  
500mL

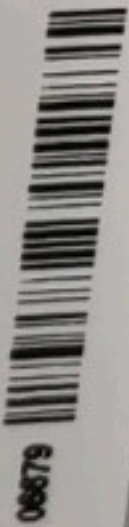
Distilled Water

REF	10977-035
LOT	2375266
	2023-08

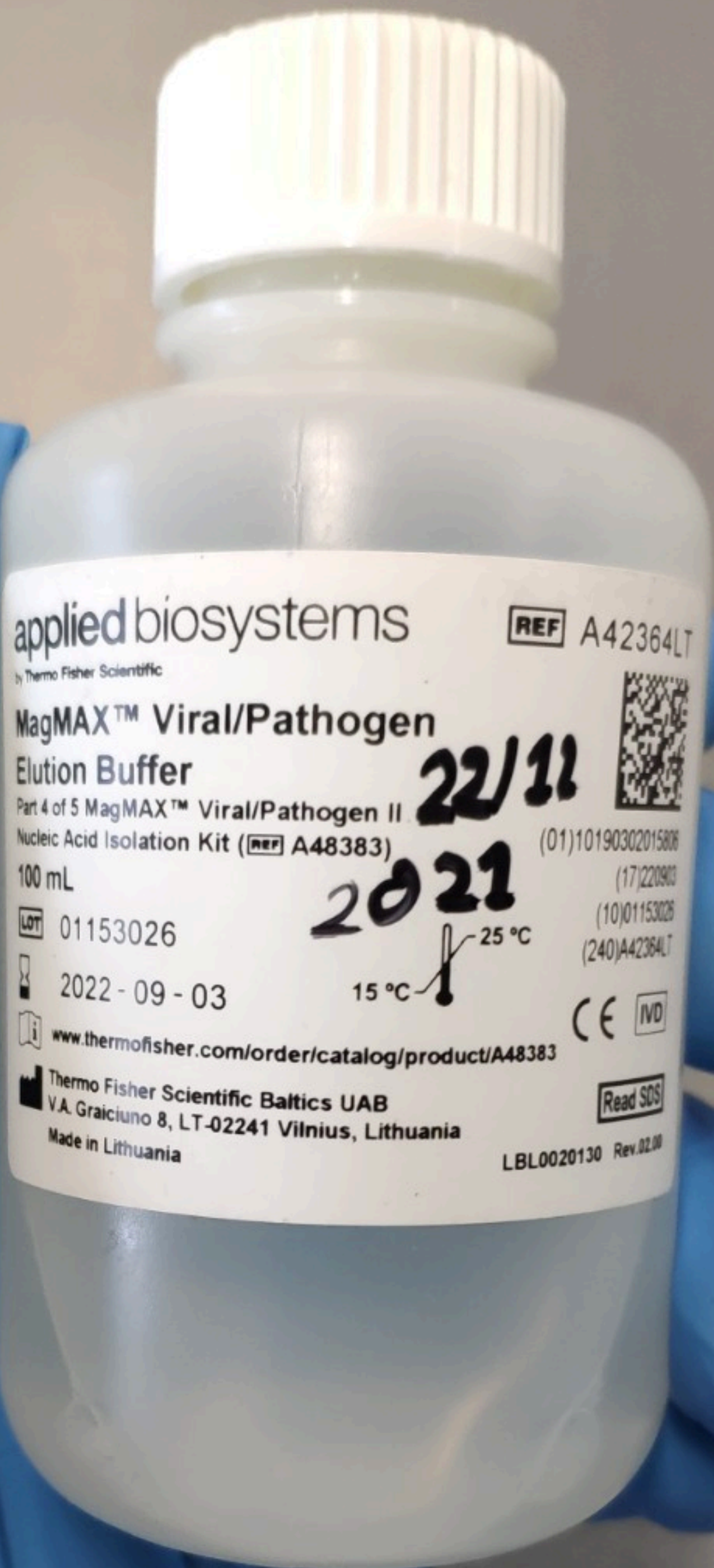


Life Technologies Limited  
3 Fountain Drive  
Inchinnan Business Park  
Paisley, PA4 9RF, UK

Made in UK







applied biosystems

by Thermo Fisher Scientific

REF A42364LT

MagMAX™ Viral/Pathogen  
Elution Buffer

Part 4 of 5 MagMAX™ Viral/Pathogen II  
Nucleic Acid Isolation Kit (REF A48383)

100 mL

LOT 01153026

2022-09-03

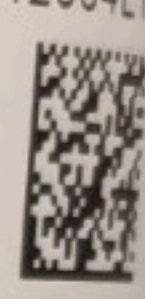
[www.thermofisher.com/order/catalog/product/A48383](http://www.thermofisher.com/order/catalog/product/A48383)

Thermo Fisher Scientific Baltics UAB  
V.A. Graiciuno 8, LT-02241 Vilnius, Lithuania  
Made in Lithuania

22/11

2021

15 °C 25 °C



(01)10190302015806

(17)220903

(10)01153026

(240)A42364LT

CE IVD

Read SDS

LBL0020130 Rev.02.00



**applied biosystems**  
by Thermo Fisher Scientific

**TaqPath™ COVID-19 RT-PCR Kit**

Real-time RT-PCR test for in vitro qualitative  
detection of nucleic acid from the SARS-CoV-2

Part 1 of 4 of TaqPath™ COVID-19 CE-IVD RT-PCR Kit (REF A48067)

**REF** A48102



Σ 1000

**LOT**

2107176

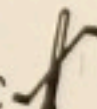



2022-07-02

CE

**IVD**



-30°C  -10°C

 Life Technologies Corporation  
6055 Sunol Boulevard  
Pleasanton, CA 94566, USA

**EC REP**

Life Technologies Europe B.V.  
Kwartsweg 2, 2665 NN  
Bleiswijk, The Netherlands

**Read SDS**

Made in UK

100093686 Rev C



**applied biosystems**  
by Thermo Fisher Scientific

**TagPath™ 1-Step Multiplex Master Mix**

No ROX

Part 4 of 4 of TagPath™ COVID-19 CE-IVD RT-PCR Kit (REF A48067)

10 mL

CE IVD LOT 01124599

2022-07-08

Life Technologies Corp.  
6055 Sunol Boulevard  
Pleasanton, CA 94566 USA

Life Technologies Europe B.V.  
Kwartweg 2, 2005, NN  
Bleiswijk, The Netherlands

Read SDS

Made in Lithuania

REF A48111

QR Code

10190302015523 (01)  
17220708 (17)  
01124599 (10)  
A48111 (240)

LBLO019788 Rev.04.00







# MagMAX™ Viral/Pathogen Wash Solution

Part 2 of 5 MagMAX™ Viral/Pathogen Nucleic Acid Isolation Kit (RNA)

1000 mL

Lot 01152606

2022-09-02

Thermo Fisher Scientific  
V.A. Disinfectant & L.T.A.  
Made in Lithuania

Contains Guanidine  
Causes skin irritation. Causes  
eye irritation. Harmful if  
SWALLOWED: Immediate  
POISON CENTER or doctor  
IF ON SKIN: Wash with  
and water. IF IN EYES:  
with water for several  
contact lenses, if possible.  
Continue rinsing.  
Dispose of contents in  
approved waste disposal

Doc 54

**opened 26/11**  
**invitrogen**

by Thermo Fisher Scientific



**REF** AM9930

**LOT** 2107156

**Ambion™**

**Nuclease-Free  
Water**

30 °C

**For RNA use only**

15 °C

Not DEPC Treated

Autoclaved, 0.2 µm filtered

Qty: 500 mL

For Research Use Only. Not for  
use in diagnostic procedures.

**Read SDS**

Product of USA

**Only use in a biosafety  
cabinet cleaned w/ RNase  
zap**

Life Technologies Corporation  
2130 Woodward St. Austin, TX 78744







**MagMAX™ Viral/Pathogen Wash Solution**

Part 2 of 5 MagMAX™ Viral/Pathogen Nucleic Acid Isolation Kit (RNA)

1000 mL

Lot 01152606

2022-09-02

Thermo Fisher Scientific  
V.A. Disinfectant & L.T.A.  
Made in Lithuania

Contains Guanidine  
Causes skin irritation. Causes  
eye irritation. Harmful if  
SWALLOWED: Immediate  
POISON CENTER or doctor  
IF ON SKIN: Wash with  
and water. IF IN EYES:  
with water for several  
contact lenses, if possible  
Continue rinsing  
Dispose of contents  
Approved waste disposal

**opened 26/11**  
**invitrogen**

by Thermo Fisher Scientific



**REF** AM9930

**LOT** 2107156

**Ambion™**

**Nuclease-Free  
Water**

30 °C

**For RNA use only**

15 °C

Not DEPC Treated

Autoclaved, 0.2 µm filtered

Qty: 500 mL

For Research Use Only. Not for  
use in diagnostic procedures.

**Read SDS**

Product of USA

**Only use in a biosafety  
cabinet cleaned w/ RNase  
zap**

Life Technologies Corporation  
2130 Woodward St. Austin, TX 78744



**applied biosystems**

by Thermo Fisher Scientific

**MagMAX™ Viral/Pathogen Wash Solution**

Part 2 of 5 MagMAX™ Viral/Pathogen II Nucleic Acid Isolation Kit (REF A48383)

1000 mL

**LOT** 01152606

**EXP** 2022 - 09 - 02

[www.thermofisher.com/order/catalog/product/A48383](http://www.thermofisher.com/order/catalog/product/A48383)

Thermo Fisher Scientific Baltics UAB  
V.A. Graiciuno 8, LT-02241 Vilnius, Lithuania

Made in Lithuania

**REF** A42360LT



(01)10190302015783  
(17)220902  
(10)01152606  
(240)A42360LT



**CE** **IVD**

**WARNING.**  
Contains Guanidine Thiocyanate.  
Causes skin irritation. Causes eye irritation. Harmful if swallowed.  
**SWALLOWED:** Immediately call a POISON CENTER or doctor.  
**IF ON SKIN:** Wash with plenty of water. **IF IN EYES:** Rinse with water for several minutes. Remove contact lenses, if present, and continue rinsing. Rinse thoroughly. Do. Continue rinsing. Rinse thoroughly. Dispose of contents/containers in an approved waste disposal plan.

**Read SDS**

LBL0020128 Rev.03.00



**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @puregeneticlifestyle.com; 5.1.2.e @puregeneticlifestyle.com; 5.1.2.e @gmail.com  
**Onderwerp:** 5.1.2.e Concept inspectierapport Pure Medical B.V.  
**Datum:** woensdag 5 januari 2022 16:51:13  
**Bijlagen:** 5.1.2.e Concept inspectierapport Pure Medical B.V..pdf

---

Geachte heer 5.1.2.e ,

Bijgaand treft u het Conceptrapport naar aanleiding van de inspectiebezoeken op 14 juli 2021 en 4 november 2021.

Met vriendelijke groet,

5.1.2.e

5.1.2.e

.....  
**Afdeling Medische Technologie**  
**Inspectie Gezondheidszorg en Jeugd**  
**Ministerie van Volksgezondheid, Welzijn en Sport**  
Stadsplateau 1 | 3521 AZ Utrecht | the Netherlands  
Postbus 2518 | 6401 DA Heerlen | the Netherlands

.....  
**M** +31 (0)6 5.1.2.e  
5.1.2.e @igj.nl  
[www.igj.nl](http://www.igj.nl)  
Twitter @IGJnl | LinkedIn IGJ

.....  
**Duidelijk. Onafhankelijk. Eerlijk.**  
.....



> Retouradres Postbus 2518 6401 DA Heerlen

Pure Medical B.V.  
t.a.v. de heer 5.1.2.e en de heer 5.1.2.e  
Olivier van Noortlaan 120  
3133 AT VLAARDINGEN  
Nederland

Stadsplateau 1  
3521 AZ Utrecht  
Postbus 2518  
6401 DA Heerlen  
T 088 120 50 00  
F 088 120 50 01  
www.igj.nl

**Inlichtingen bij**  
5.1.2.e  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)

**Ons kenmerk**  
5.1.2.e

Datum 5 januari 2022  
Onderwerp Concept inspectierapport

**Bijlagen**  
1

Geachte heer 5.1.2.e en heer 5.1.2.e,

Hierbij stuur ik u het concept inspectierapport n.a.v.:

- Het bezoek van de Inspectie op 14 juli en 4 november 2021 aan Pure Medical in Vlaardingen;
- Op aangeleverde documentatie (aangeleverd per email);
- Op deskinspecties uitgevoerd op 23 november en 22 december 2021 op het online kwaliteit management systeem Zenya.

In dit concept inspectierapport legt de inspectie haar bevindingen vast. In bijlage 1 staat weergegeven welke documenten de inspectie hiervoor heeft geraadpleegd.

Graag ontvang ik vóór 20 januari 2022 van u een reactie op eventuele feitelijke onjuistheden. Als u naar aanleiding van het conceptrapport nog vragen of opmerkingen heeft, dan kunt u hierover ook vóór deze datum contact opnemen.

De inspectie ontvangt uw reactie graag op haar algemene e-mailadres: [meldpunt@igj.nl](mailto:meldpunt@igj.nl) onder vermelding van het kenmerk van deze brief.

Na verwerking van uw opmerkingen, stelt de inspectie het rapport vast. U ontvangt het vastgestelde rapport via de e-mail en per post.

Ik vertrouw er op u hiermee voldoende te hebben geïnformeerd.

Nogmaals excuses voor de vertraging.

Hoogachtend,

5.1.2.e

# Buiten reikwijdte verzoek

---

**Van:** 5.1.2.e @gmail.com <5.1.2.e @gmail.com>

**Verzonden:** woensdag 19 januari 2022 12:44

**Aan:** meldpunt@igj.nl

**CC:** 5.1.2.e @puregeneticlifestyle.com>

**Onderwerp:** 5.1.2.e



Vlaardingen, 19 januari 2022

Betreft: reactie concept inspectie rapport kenmerk 5.1.2.e .

Geachte Heer 5.1.2.e,

U heeft ons verzocht om te reageren op het concept inspectie rapport kenmerk 5.1.2.e

In de bijlage treft u onze reactie aan. Deze tabel spreekt voor zich. Wij dachten dat het makkelijker zou zijn om u weer toegang te verlenen tot ons kwaliteitsbeheersysteem Zenya, deze hebben wij weer voor u geactiveerd.

Wij hebben zorgvuldig uw vragen proberen te beantwoorden. Wat ons is opgevallen is dat het eerste en tweede bezoek niet van elkaar gescheiden waren terwijl er kort na het eerste bezoek alle acties waren opgelost.

Bepaalde vraagstellingen waren onduidelijk, temeer omdat er vragen waren over documenten die al in Zenya stonden. Na nader intern onderzoek is gebleken dat deze mappen en documenten nog niet zichtbaar waren gemaakt voor inzage in uw domein, hiervoor onze excuses, dat was een fout aan onze zijde.

Graag treden wij in gesprek om eventuele onduidelijkheden te verhelderen.

Mocht u nog vragen hebben of opmerkingen dan vernemen we dat graag.

Met vriendelijke groet,

5.1.2.e ,

5.1.2.e



5.1.2.e

5.1.2.e

## Antwoord op de vragen dienst testen

Vraag	pag	Antwoord	Door	Bijlage
De twee bezoeken en de inspecties zijn tegelijkertijd gerapporteerd. Daarnaast zijn bevindingen vanuit de desk analyse gerapporteerd. Veel van de opmerkingen zijn verwerkt in de nieuwe versie van het KHB.	1		5.1.2.e	Bijlage 1, KHB
Is er een RIE gemaakt ? <ul style="list-style-type: none"> <li>• Heeft de werkgever een risico-inventarisatie en –evaluatie gemaakt van de werkzaamheden?</li> <li>• Worden de juiste veiligheidsvoorschriften gehanteerd rond het werken met de voor SARS-CoV-2-diagnostiek gebruikte chemicaliën?</li> <li>• Welke eventuele beheersmaatregelen worden getroffen en is dit gebeurd volgens de arbeidhygiënische strategie</li> </ul>	6	Er is een algemene RIE gemaakt door 5.1.2.e . Er zijn twee RIE gemaakt een van het pre-analytisch proces en een van het analytisch proces.	Afgewerkt	4.14b
De inspectie vroeg daarop of het uitvoeren van SARS-CoV-2 diagnostiek in het laboratorium in Vlaardingen in overeenstemming is met het contact van Dienst Testen	8	We voeren uit conform contact. Er is regelmatig overleg door onze CEO met de dienst testen over testen in eigen beheer.	Afgewerkt	
Een lijst met persoonsnamen voor de invulling van de functies uit het functioneel organigram is niet aanwezig (of niet volledig). Functieaanduiding en de onderlinge relaties van het personeel in de verschillende KMS documenten is niet consistent	9			4.01a
De molecuair bioloog en arts microbioloog zijn niet opgenomen in de Roles and Responsibilities Chart van het PGL-ISO - QUALITY HANDBOOK.		Is vervallen, nu is alleen valide de "organization charge PGL ". Versie 3	Afgewerkt	4.01a
De processen "SARS-CoV2 diagnostiek uitgevoerd op PM locatie Vlaardingen (extractie & RT-PCR)" en "sample reporting" zijn door de inspectie niet aangetroffen in de chart.		Er zijn twee procesbeschrijvingen in het handboek aanwezig.	Afgewerkt	KHB
<b>PGL performs a direct PCR in its own laboratory. De scope en visie document is aangepast</b>	10	Tot accreditatie wordt dit dubbel gedaan voor	Afgewerkt	KHB

		verificatie van de workflow. Heeft de goedkeuring van VWS. De scope en visie document is aangepast		
Terugkoppeling van de RvA	10	Er heeft een documenten beoordeling plaatsgevonden door de RvA met een aantal opmerkingen. Een aanvraag voor bezoek van de RvA is in voorbereiding.	afgewerkt	
Documentbeheersysteem; Het is onduidelijk of een revisiehistorie aanwezig is. Een protocol met de beschreven verantwoordelijkheid/accordering van wijzigingen heeft de Inspectie niet gevonden. Onduidelijk hoe is vastgelegd hoe (en of) het personeel wijzigingen in procedures (ter kennisgeving) vernomen heeft. (pag10)	10	Het documentbeheerssysteem zorgt daarvoor en dat is beschreven in het document management. Revisie beleid en leesbevestiging is daarin vastgelegd.	Afgewerkt, nieuwe sop documentbeheer	KHB
In PGL-ISO - QUALITY HANDBOOK (8-NYP-84) paragraaf 4.5 "Examination by referral laboratories" is geen documentatie aangetroffen hoe selectie en evaluatie van het referentie lab en aangetrokken consultants qua procedure uitgevoerd moet worden. De Inspectie heeft geen documentatie gevonden waaruit blijkt dat PM beschikt over een dergelijke procedure	11	De criteria zijn vastgelegd en de beoordeling heeft plaats gevonden		KHB
De inspectie heeft in paragraaf 4.5 van PGL-ISO - QUALITY HANDBOOK (8-NYP-84) wel (delen van) de uitkomst van een dergelijke beoordeling voor Novogenia aangetroffen. Beoordeling voor extern aangetrokken deskundige (bijv. MMM) heeft de inspectie niet aangetroffen.	Pag 12	Niovogenia is ISO 15189 geaccrediteerd. Novogenia voldoet aan onze criteria van een verwijzingslaboratorium. Volgens goed gebruik in lab land wordt dit als voldoende beschouwd.		
Kruisverwijzingslijst RvA-PGL (Version 2) verwijst naar document HT-DH-72 in het KMS, dit document is niet aangetroffen tijdens beide deskinspecties	11	Staat in het systeem 4.5 audit rapport Novogenia (HT-DH-72)	Kruisverwijzingslijst Versie 3	3

De heer 5.1.2.e gaf aan op 4 november 2021 aan dat PM voor het meten van samples in Vlaardingen niet beschikt over een (volledige) risico inventarisatie- en evaluatie (RI&E) betreffende SARS-CoV-2 diagnostiek op GGD samples.		Er zijn drie RIE uitgevoerd : een voor het pre-analytisch proces, een voor het analytisch proces, en een overall door een Externe veiligheidsdeskundige	Afgewerkt	4.14b
Het SARS-CoV-2 analyse proces uitgevoerd door PM in Vlaardingen is niet beschreven in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84). In paragraaf 5.5 “Ensuring the quality of research results” staat beschreven dat om de kwaliteit van de onderzoeksresultaten te waarborgen, de onderzoeksresultaten worden uitgevoerd onder de gedefinieerde voorwaarden die zijn vastgesteld door Novogenia. Ook staat vermeld dat de kwaliteit van de resultaten valt onder de verantwoordelijkheid van Novogenia. PM locatie Vlaardingen wordt voor het analyse proces niet genoemd in het KMS.	11	Aangepast in KHB versie 5.		KHB
PGL-ISO - QUALITY HANDBOOK (8-NYP-84). Ik citeer: 4.9 “Identification and control of non-conformities. Non conformities could be established by audits, RI&E.” De heer 5.1.2.e gaf aan op 4 november 2021 aan dat PM voor het meten van samples in Vlaardingen niet beschikt over een (volledige) risico inventarisatie- en evaluatie (RI&E) betreffende SARS-CoV-2 diagnostiek op GGD samples. Op 22 december 2021 heeft de Inspectie in het KMS wel een Failure Mode and Effect log Excel aangetroffen (FMEA pre post analysis PGL 24-44-RH) De heer 5.1.2.e gaf aan op 4 november 2021 aan dat de samples die gemeten worden in Oostenrijk vallen onder de RI&E van Novogenia	11	Is uitgevoerd; FMEA analysis PGL 20220105 (4.14b Risk analysis reports)	Afgewerkt	4.14b
Tijdens de rondgang door het laboratorium op xx 2021 constateerden de inspecteurs dat er geen zichtbare kalibratie datum genoteerd was op de pipetten in het laboratorium. Er is tijdens de KMS beoordeling van 23 november 2021 geen documentatie aangetroffen die een interne procedure voor periodieke controle en/of kalibratie van pipetten vastlegt. Bij de deskinpectie van 22 december 2021 is een dergelijke procedure	11	Iedere pipet heeft een logboek waarin staat tot hoe lang een kalibratie valide is. ( Een jaar). Een aantal pipetten zijn ter kalibratie opgestuurd. De pipetten zijn gestickerd met goedkeuring tot.	afgewerkt	

wel aangetroffen: Logbook Multi-channel pipettes, Version 1 & Multi-Channel Pipettes, WTN-86-V, Version 1				
Functie-eisen en competenties vakinhoudelijk verantwoordelijke waren op 23 november 2021 niet in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84) handboek terug te vinden. Bij de deskinspectie van 22 december 2021 is een beknopte omschrijving in het KMS terug te vinden in het document Job Descriptions (Version 2, 88-TQ-CR)	12	De uitgebreide functie beschrijvingen stonden er in. (4.01a Job descriptions)	Afgewerkt	4.01a
In hoofdstuk 5 paragraaf 5.1.2 Personnel Qualifications & 5.1.3. Job descriptions: In het Quality handbook staat de volgende zin opgenomen over de functie omschrijvingen en kwalificaties: "Qualifications of personnel are documented in job descriptions", "The job descriptions can be found in the document management system under document "Job descriptions" in the folder Overall regulations for working at PGL." Dit document heeft de inspectie tijdens de beoordeling van het KMS in de ochtend van 23 november 2021 niet in online (in Zenya) aangetroffen. Bij de deskinspectie van 22 december 2021 was dit document aanwezig in het KMS (88-TQ-CR). Functie-eisen en competenties. Bij de beoordeling van het KMS, in de ochtend van 23 november 2021, heeft de inspectie geen documentatie aangetroffen die betrekking heeft op functie-eisen, scholing en/of competenties. On-the-job (OTJ) Training Program Training and Introduction of New Lab Assistants (NQ-27-VD) geeft een summiere hoog over introductie maar bevat geen zaken als : o Een procedure voor de aanwerving van personeel. o Een procedure voor de opleiding, de evaluatie van de competentie en de continue opleiding van personeel. o Een procedure met betrekking tot het bijhouden van de dossiers betreffende tot de opleiding, kennis en vaardigheden van alle personeelsleden	12		Afgewerkt	5.01

Een algemene procedure voor het beleid inzake administratief beheer en gebruik van laboratoriumapparatuur (met name de apparatuur voor   Inspectie Gezondheidszorg en Jeugd   Pagina 14 van 20 moleculaire diagnostiek) was tijdens de rondgangen niet aanwezig om de vraag te beantwoorden wie voldoende gekwalificeerd is voor gebruik. Procedures per apparaat die de implementatie beschrijven (bv. de wijze waarop, hoe vaak en door wie de kwalificaties worden uitgevoerd, de wijze van rapporteren, registreren en archiveren, inclusief door wie, en de verantwoordelijken) waren niet of onvoldoende aanwezig tijdens de rondgang. Ook tijdens de deskinspecties is deze informatie niet aangetroffen in het KMS.	13,14	Apparatuur selectie criteria. Inwerken personeel		KHB en 5.01
Pag 14 Op 15 december 2021 heeft de Inspectie aan de heer 5.1.2.e het verzoek gedaan voor het aanleveren van kopieën/foto's van CE-IVD markeringen op de voor workflow (3) gebruikte reagentia & apparatuur op de locatie Vlaardingen. Aanvullende informatie, ontvangen op 22 december 2021, laat zien dat PM voor workflow 3 voor RNA isolatie en RT-PCR gebruik maakt van CE-IVD kits. Voor amplificatie en detectie maakt PM gebruik van een QuantStudio™5 Real-Time PCR Instrument. Deze machine is in de markt gezet als "For Research, Forensic, or Paternity Use Only"	14	Apparaat is geverifieerd voor diagnostiek.	Afgewerkt	
PM gaf aan over een procedure te beschikken waarmee voorkomen wordt dat patiëntresultaten worden vrijgegeven in het geval dat de kwaliteitscontrole resultaten ondermaats zouden zijn. Kruisverwijzingslijst RvA–PGL verwijst naar KMS document: 8-NYP-84. Dit document is niet aangetroffen in het KMS op 22 december 2021. Op deze datum was wel een procedure Automatic Acceptance Criteria (Version 1, BYH-84-H, publicatiedatum 23-11-2021) aanwezig in het KMS	16	Document is aanwezig: "Releasing results"; 5.09 Release of results	Afgewerkt	5.09
Een procedure voor externe (periodieke) kwaliteitsevaluatie is niet aanwezig in het KMS.		Document: "External quality control procedure"; Ensuring quality of examination		5.06
Voor moleculaire diagnostiek legt een laboratorium criteria vast voor de meetonzekerheid. Het KMS bevat de bepaling van	16	VWS eiste een complete verificatie. De andere	Afgewerkt	



workflow 3. (MagMAX/KingFisher™ /TaqPath™) Analytical Sensitivity – LOD (doc.Y-268-GV). Een procedure over hoe de meetonzekerheid bepaald wordt en hoe dit periodiek geborgd/opnieuw beoordeeld wordt is niet (volledig) aanwezig voor de 4 beschreven workflows in het KMS.		workflows waren voldoende als we een klinische vergelijking konden laten zien met het referentie lab.		
De aangeleverde documentatie bevat een wetenschappelijk artikel over inactivatie van het virus door Guanidine thiocynaat. PM heeft geen documentatie overhandigd waaruit blijkt dat de samenstelling van de gebruikte lysisbuffer overkomt met het beschreven wetenschappelijke artikel en dat (volledige) virus inactivatie via deze procedure geborgd is	17		Afgewerkt	5.03b
Procedure van het luchtwegtransport van Vlaardingen naar Oostenrijk. De inspectie heeft geen procedure in het KMS aangetroffen waaruit blijkt dat het transport van de GGD samples geborgd en afgestemd is op: o Een tijdsbestek voor de SARS-CoV2 analyse en het beleid gevoerd door Novogenia. o Binnen een bepaald temperatuursinterval. De optimale omstandigheden/conserveringsmiddelen/verpakking die de integriteit van het sample, de veiligheid van de transporteur en het de wettelijke eisen ontvangende laboratorium waarborgen (conform richtlijnen en/of wetgeving Oostenrijk)	Pag 17	Procesbeschrijving		5.04
Er is geen validatie procedure of documentatie overlegd waaruit blijkt dat het transport per vliegtuig geen effect heeft op stabiliteit van het analyte	Pag 17	Er zijn talloze vergelijkingen gedaan naar specificiteit en sensitiviteit bij de verschillende workflows . Blijken prima overeen te stemmen met het referentie lab.. Monsters worden vervoerd bij kamertemperatuur volgens UN3373 . Buisjes zijn met stoppen afgesloten waardoor bij onderdruk niets kan lekken.		

Een procedure voor het omgaan met non-conformiteiten van reagens and consumables is niet aanwezig in het KMS. • Procedures omtrent het omgaan met signalen van incidenten dan wel het melden van incidenten/calamiteiten bij inspectie zijn niet aanwezig in het KMS	Pag 17	Verification of new reagent lots	Afgewerkt	5.03b

18-1-2022

**Van:** 5.1.2.e [@gmail.com](#)  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** Commentaar concept inspectie rapport  
**Datum:** dinsdag 25 januari 2022 14:38:28

---

Geachte Heer 5.1.2.e,

We hebben ons commentaar op het concept inspectie rapport toegestuurd. We vroegen ons af of u het in goede orde ontvangen heeft ?

Mocht u nog vragen of opmerkingen hebben we zij zijn meer dan bereid deze te beantwoorden.

Met vriendelijke groet,

5.1.2.e

5.1.2.e Pure medical

06-5.1.2.e



Inspectie Gezondheidszorg en Jeugd  
*Ministerie van Volksgezondheid,  
Welzijn en Sport*

Rapportage van de inspectiebezoeken  
aan het laboratorium van Pure Medical B.V.  
op 14 juli en 4 november 2021 te Vlaardingen

Utrecht, 01-06-2022

Meldingnummer: 5.1.2.e



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**Inlichtingen bij**

5.1.2.e  
5.1.2.e @igj.nl  
T 088-1205000

**Datum**

3 januari 2022

# 1 Inleiding

## 1.1 Aanleiding en belang

### 1.1.1 Aanleiding

In het kader van haar toezichthoudende taak bracht de Inspectie Gezondheidszorg en Jeugd (hierna: de inspectie) op 14 juli 2021 een inspectiebezoek aan Pure Medical B.V. op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Dit inspectiebezoek werd uitgevoerd door de heer 5.1.2.e en de heer 5.1.2.e. Aanleiding voor dit inspectiebezoek was 5.1.2.i

Op 5.1.2.i

op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Tijdens het inspectiebezoek op 14 juli 2021 constateerde de inspectie dat de werkzaamheden zich beperkten tot monstervoorbereiding uitgevoerd ten behoeve van SARS-CoV-2 diagnostiek bij Novogenia GmbH, Oostenrijk. 5.1.2.i 5.1.2.i had betrekking op de kwaliteit van de SARS-CoV-2-analyse werkzaamheden uitgevoerd op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Dit was de reden voor de inspectie om naar aanleiding van deze nieuwe melding een herbezoek af te leggen op 4 november 2021. Dit inspectiebezoek werd uitgevoerd door de heer 5.1.2.e en de heer 5.1.2.e en is bij ons geregistreerd onder 5.1.2.e.

### 1.1.2 Belang

Eén van de toezichttaken van de inspectie is het toezicht op de kwaliteit van de laboratoriumdiagnostiek in het algemeen en tijdens de huidige coronacrisis het toezicht op de kwaliteit van de uitvoering van de SARS-CoV-2 diagnostiek in het bijzonder.

Pure Medical B.V. (hierna: PM) is als zorgaanbieder verplicht goede zorg aan te bieden (artikel 2 Wkkgz (Wet kwaliteit, klachten en geschillen zorg). Goede zorg is zorg die in ieder geval veilig is. PM is tevens verplicht de zorgverlening op zodanige

wijze te organiseren, zich zowel kwalitatief als kwantitatief zodanig van personele en materiële middelen te bedienen en, voor zover nodig, bouwkundige voorzieningen te treffen, alsmede zorg te dragen voor een zodanige toedeling van verantwoordelijkheden, bevoegdheden alsmede afstemmings- en verantwoordingsplichten, dat één en ander redelijkerwijs moet leiden tot het verlenen van goede zorg (artikel 3 Wkkgz).

Om hier invulling aan te geven is PM eveneens verplicht zorg te dragen voor een veilige toepassing van medische technologie en veldnormen. Ook dient zij met betrekking tot het toepassen van medische technologie zorg te dragen voor schriftelijke vastlegging van taken, bevoegdheden, verantwoordelijkheden en bekwaamheidseisen voor degenen die daarbij betrokken zijn. Daarnaast dient zij gegevens vast te leggen waaruit blijkt dat aan de bekwaamheidseisen wordt voldaan (artikel 4.1 lid 1 en 2 Uitvoeringsbesluit Wkkgz). Voorgaande vloeit voort uit artikel 5 en 7 van de Wkkgz.

Gezien de rol en taakstelling van de inspectie en in het belang van veilige en goede zorg onderzoekt de inspectie of PM wat betreft de zorgverlening door middel van haar PCR laboratorium voldoet aan de Wkkgz.

## 1.2 Methodiek

### 1.2.1 Onderzoeksmethode en -periode

In het kader van de toezichthoudende taak bracht de inspectie op 14 juli een inspectiebezoek en op 4 november 2021 een herbezoek aan de laboratoriumlocatie van PM op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Tijdens beide bezoeken heeft de inspectie een inleidend gesprek gehad met de heren 5.1.2.e (5.1.2.e) en 5.1.2.e (5.1.2.e) en heeft er vervolgens een rondleiding op het laboratorium plaatsgevonden. Op verzoek van de inspectie heeft PM achteraf aanvullende documentatie nagezonden. De nagezonden informatie heeft de inspectie beoordeeld op 23 november en 22 december 2021.

### 1.2.2 Onderzoeksvragen

Door middel van bestudering van de waargenomen bevindingen opgedaan tijdens beide bezoeken en de gedeelde documentatie (zie overzicht in bijlage 1), is getoetst of het uitvoeren van SARS-CoV-2 diagnostiek door PM voldoet aan de vigerende wet- en regelgeving op de aspecten bestuur/verantwoordelijken, kwaliteitsmanagement, competenties, gebruikte medische hulpmiddelen, in-huis ontwikkeling van testen, laboratoriuminrichting, vigilantie en continuïteit en opschaling.

Over de aspecten in 5.1.2.e

heeft de inspectie overlegd met de Inspectie Sociale Zaken en Werkgelegenheid (ISZW). De inspectie onderzocht namens ISZW ook onderstaande aspecten:

- Heeft de werkgever een risico-inventarisatie en –evaluatie gemaakt van de werkzaamheden?
- Worden de juiste veiligheidsvoorschriften gehanteerd rond het werken met de voor SARS-CoV-2-diagnostiek gebruikte chemicaliën?
- Welke eventuele beheersmaatregelen worden getroffen en is dit gebeurd volgens de arbeid hygiënische strategie?

### 1.2.3 Toetsingskader

De inspectie heeft tijdens beide bezoeken onderzocht of de uitvoering van de SARS-CoV-2 diagnostiek volgens geldende wet- en regelgeving verloopt. De volgende wetten zijn daarbij getoetst:

1. Wet op de medische hulpmiddelen (hierna: Wmh) in samenhang met Besluit in-vitro diagnostica (hierna Bivd)
2. Wet kwaliteit, klachten en geschillen zorg (hierna: Wkkgz)

Veldnormen die invulling geven aan de eisen in de betreffende wetten zijn de volgende. Daarbij is specifiek ook gekeken naar veldnormen die invulling geven aan de wetgeving en daarbij de bijzondere situatie ten tijde van de COVID-19 pandemie mee laten wegen.

3. NVMM kwaliteitsdocument COVID-19, 1 april 2020. Dit betreft een kwaliteitsdocument van de Nederlandse Vereniging voor Medische Microbiologie (NVMM) die "hiermee beoogt een overzicht te geven van de kwaliteitseisen waaraan medisch-microbiologische laboratoria (MML) en, in geval van escalatie, niet-MML moeten voldoen. Het document is opgesteld om te voldoen aan landelijk behoefte aan een snelle en aanzienlijke capaciteitsverhoging van COVID-19 diagnostiek. Dit document beschrijft op welke manieren in deze behoefte kan worden voorzien, en geeft aan welke criteria en prioriteringen in acht moeten worden genomen om onder deze uitzonderlijke omstandigheden de kwaliteit van de microbiologische diagnostiek en de bijbehorende keten te kunnen waarborgen." Dit kwaliteitsdocument verwijst naar ISO-15189 en de NVMM Richtlijn Moleculaire diagnostiek van infectieziekten zoals ingebed in de FMS richtlijnen database als onderbouwing voor de gestelde criteria.
4. ISO 15189: NEN-EN-ISO 15189:2012 Medische laboratoria - Bijzondere eisen voor kwaliteit en competentie. Dit betreft een geharmoniseerde Europese standaard die invulling geeft aan de eisen voor medische laboratoria in het algemeen.
5. FMS richtlijn Moleculaire diagnostiek van infectieziekten (tot stand gekomen op initiatief van Nederlandse Vereniging voor Medische Microbiologie). Dit betreft een richtlijn van de beroepsgroep van medisch microbiologen die tot doel heeft "laboratoria te ondersteunen in het tot stand komen van betrouwbare laboratoriumuitslagen binnen de moleculaire diagnostiek van infectieziekten, in aanvulling op de bestaande ISO 15189 norm".
6. LCI richtlijn COVID: Dit betreft een *CONCEPT*-richtlijn die is "bedoeld voor GGD'en en andere zorgprofessionals en geeft aan hoe te handelen bij een persoon met (verdenking op) COVID-19." De bijlage "Aanvullende informatie diagnostiek COVID-19" Bijlage bij de LCI-richtlijn COVID-19 | Versie 14 december 2021 geeft verdere invulling aan welke SARS-CoV-2 diagnostiek mogelijk is en beschrijft voor de PCR mogelijkheid criteria voor validatie.

## 2 Resultaten inspectieonderzoek

De beschreven resultaten van dit inspectieonderzoek zijn gebaseerd op door PM bevestigde gesprekverslagen van het inspectiebezoek op 14 juli en 4 november 2021, op aangeleverde documentatie en de desksinspecties uitgevoerd op 23 november en 22 december 2021 op het online kwaliteit management systeem Zenya (hierna: KMS). In dit verslag legt de inspectie haar bevindingen vast. In bijlage 1 staat weergegeven welke documenten de inspectie hiervoor heeft geraadpleegd

### 2.1 Algemeen

#### 2.1.1 *Pure Medical B.V.*

PM is onderdeel van PGL Finance B.V. (KvK-nummer 27352865), gevestigd in Delfgauw, Nederland. De activiteiten van PM richten zich specifiek op SARS-CoV-2 diagnostiek en worden uitgevoerd in een gebouw aan de Olivier van Noortlaan 120 in Vlaardingen. In dit gebouw zijn meerdere laboratoria gevestigd. PM huurt hier laboratoriumruimte.

#### 2.1.2 *Opdrachtgever(s)*

De heer 5.1.2.e gaf tijdens het eerste gesprek op 14 juli aan dat PM sinds 2 januari 2021 SARS-CoV-2 diagnostiek op nasofaryngeale swabafnames verzorgt voor verschillende GGD'en. Dit is contractueel vastgelegd. De heer 5.1.2.e gaf tijdens het 2<sup>e</sup> gesprek op 4 november aan dat PM een contract voor het uitvoeren van SARS-CoV-2 diagnostiek heeft met Dienst Testen. De inspectie vroeg daarop of het uitvoeren van SARS-CoV-2 diagnostiek in het laboratorium in Vlaardingen in overeenstemming is met het contact van Dienst Testen. De heer 5.1.2.e kon deze vraag tijdens het inspectiebezoek niet beantwoorden. Op 18 november informeerde PM de inspectie dat PM deze informatie niet mag delen omdat er een geheimhoudingsverklaring met de dienst testen is getekend over de inhoud van het contract. Dit contract liep tot mei 2021 en is met een addendum verlengd tot 3 weken na definitieve toekenning van de nieuwe aanbesteding. De heer 5.1.2.e gaf ook aan dat PM meegedaan heeft in de nieuwe aanbestedingsronde maar dat dit niet toegekend is. De heer 5.1.2.e gaf verder aan geen andere samenwerkingspartners te hebben m.b.t. het aanleveren van samples voor SARS-CoV-2 diagnostiek.

#### 2.1.3 *Aanbesteding SARS-CoV-2 diagnostiek Dienst Testen*

PM heeft besloten om medio 2021 een gedeelte van de GGD nasofaryngeale swab samples op de PM locatie in Vlaardingen te analyseren. Een belangrijke vraag voor de inspectie bij deze ontwikkeling was: Voldoet deze constructie aan de voorwaarden zoals afgesproken met Dienst Testen en is deze in lijn met de criteria zoals die gesteld zijn in de Europese aanbesteding moleculaire diagnostiek SARS-CoV-2 voor het ministerie van VWS? (<https://www.diensttesten.nl/aanbesteding>). Betreft geschiktheidseisen maakt deze aanbesteding onderscheid in landelijke en regionale percelen. Voor Regionale Percelen(RP) zijn een vijftal geschiktheidseisen beschreven waarbij de inspectie van mening is dat voor deze situatie relevante eisen zijn:

*Geschiktheidseis RP3: Locatie(s) ingezet voor uitvoering van de Opdracht is ISO15189 of ISO17025 geaccrediteerd door de daarvoor aangewezen officiële instantie van het land waarin de locatie van uitvoering zich bevindt, met PCR scope en SARS-CoV-2 in de verrichtingenlijst. Notitie; waarbij als alternatief deze accreditatie aantoonbaar in aanvraag is.*

*Geschiktheidseis RP4: Inschrijver beschikt over de 'Verklaring van Prestatie voor de detectie van SARS-CoV-2' die is afgegeven door het RIVM.*

*Geschiktheidseis RP5: Locatie(s) ingezet voor uitvoering van de Opdracht beschikken over minimaal twee volledig gevalideerde (zoals beschreven in ISO15189 of ISO17025) Workflows, waarbij de amplificatie - en detectiemethodiek, specifieke apparatuur, dan wel reagentia, van elkaar verschillen.*

De door PM aangeleverde informatie laat zien dat:

- De ISO 15189 accreditatieaanvraag voor het laboratorium in Vlaardingen op 23 augustus 2021 door de RvA geaccepteerd en in behandeling genomen (nr. M327).
- De 'Verklaring van Prestatie voor de detectie van SARS-CoV-2' is afgegeven op 9 oktober 2021.
- Op 11 oktober PM Vlaardingen begonnen is met moleculaire SARS-CoV-2 diagnostiek op GGD samples waarbij i.s.m. Novogenia vier workflows voorhanden waren.

Op basis van de informatie in dit rapport concludeert de inspectie dat, mede door de samenwerking met Novogenia, het aannemelijk is dat PM laboratorium Vlaardingen ook op redelijke wijze voldoet aan de opgenomen geschiktheidseisen zoals deze zijn gesteld door dienst Testen in de documentatie betreffende regionale percelen voor SARS-CoV-2 diagnostiek.

#### 2.1.4 Laboratorium werkzaamheden

Op basis van de website <https://www.puremedical.world/pcr-laboratory-Analysis> (bijlage 1), het inspectiebezoek van 14 juli 2021 (bijlage 2 & 3) en het PGL-ISO - QUALITY HANDBOOK (8-NYP-84, pagina 7, bijlage 4) concludeert de inspectie dat de handelingen van de door PM geleverde dienst op te splitsen zijn in 2 delen namelijk:

(1) Monstervoorbereiding. Monstervoorbereiding vindt plaats aan de Olivier van Noortlaan 120 in Vlaardingen en omvat het uitvullen van buizen met lysisbuffer voor GGD's, het ontvangen van buizen afkomstig van GGD's en het overpipetteren van samples naar een 96-wells systeem.

(2) Analyse: De isolatie, nucleïnezuuramplificatie en detectie worden door Novogenia GmbH (hierna: Novogenia) in Oostenrijk uitgevoerd. Novogenia is een ISO 15189 geaccrediteerd lab en is bij het RIVM bekend als laboratorium voor moleculaire SARS-CoV-2-diagnostiek die diagnostiek uitvoert of uitgevoerd heeft in afstemming en onder contract met VWS (nu Dienst Testen).

Bij het herbezoek op 4 november 2021 gaf de heer 5.1.2.e aan dat PM op de locatie aan Olivier van Noortlaan 120 in Vlaardingen ook SARS-CoV-2 diagnostiek op GGD samples uitvoert. Deze situatie is wezenlijk anders ten opzichte van de situatie zoals de inspectie aantrof tijdens het bezoek van 14 juli 2021, waar de handelingen van PM zich beperkten tot monstervoorbereiding. De heer 5.1.2.e gaf aan dat op dat moment ongeveer 10% van de samples in Vlaardingen en 90% van de samples in Oostenrijk bij Novogenia werden bepaald. In de email van de heer 5.1.2.e op 18



november aan de inspectie is een Excel bestand bijgevoegd (bijlage 5) waarin PM aangeeft dat er tussen week 41 en week 46 van 2021 SARS-CoV-2 diagnostiek uitgevoerd is op 5.1.2.c GGD samples. Hierbij zijn 5.1.2.c samples (5.1.2.c) geanalyseerd op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen en 5.1.2.c (5.1.2.c) bij Novogenia in Oostenrijk.

## 2.2 Bestuur & Verantwoordelijken

De heer 5.1.2.e verklaarde tijdens het gesprek op 14 juli (bijlage 2) dat de vakinhoudelijke verantwoordelijkheid voor moleculaire diagnostiek bij Novogenia ligt. Een moleculair medisch microbioloog (MMM) verbonden aan Novogenia is verantwoordelijk voor de uitslagen die door Novogenia worden gegenereerd. Terugkoppeling van de resultaten naar de persoon die getest is, en daarbij de medische verantwoordelijkheid, ligt bij de arts van de GGD. PM is, als contractant van Dienst Testen, eindverantwoordelijke voor de geleverde kwaliteit van zorg van de gehele aangeboden dienst.

PM heeft als reactie op de feitelijke onjuistheden op het gespreksverslag van het herbezoek op 4 november aangegeven dat voor de SARS-CoV-2 diagnostiek locatie Vlaardingen de vakinhoudelijke verantwoordelijkheid bij de technisch directeur ligt. De 5.1.2.e wordt hierbij ondersteund door de 5.1.2.e Dr. 5.1.2.e. PM heeft een overeenkomst met 5.1.2.e, BIG nummer 5.1.2.e, die medisch inhoudelijk verantwoordelijke is.

Op basis van de aangeleverde informatie heeft de inspectie het volgende in het KMS geconstateerd:

- De organisatiestructuur zoals beschreven in de *Organisation Chart PGL* en *Roles and Responsibilities Chart (KH-QP-65)* komt niet overeen met de organisatiestructuur zoals beschreven in het *PGL-ISO - QUALITY HANDBOOK (8-NYP-84)*. Zo is niet in alle documentatie, de Medisch Moleculair Microbioloog, Office Management en Novogenia opgenomen. Een lijst met persoonsnamen voor de invulling van de functies uit het functioneel organigram is niet aanwezig (of niet volledig). Functieaanduiding en de onderlinge relaties van het personeel in de verschillende KMS documenten is niet consistent.
- De moleculair bioloog en arts microbioloog zijn niet opgenomen in de *Roles and Responsibilities Chart* van het *PGL-ISO - QUALITY HANDBOOK (8-NYP-84)*. Er zijn ook geen andere documenten gevonden m.b.t. hun rol, taken en verantwoordelijkheden, hoe in het KMS vastgelegd.
- In de *Roles and Responsibilities Chart* is het SARS-CoV-2 pre-analytisch proces en het post-analytisch proces beschreven. De processen "SARS-CoV-2 diagnostiek uitgevoerd op PM locatie Vlaardingen (extractie & RT-PCR)" en "sample reporting" zijn door de inspectie niet aangetroffen in de chart.
  - De scope, zoals beschreven in *PGL Vision and Mission Document (Version 1)* komt niet overeen met de scope zoals beschreven in het *PGL-ISO - QUALITY HANDBOOK (8-NYP-84)*: De scope & visie in het *PGL Vision and Mission Document (Version 1)* beperkt zicht tot de uitbesteding van de SARS-CoV-2 analyse bij Novogenia. Ik citeer: "We make use for the analytical part of Novogenia GmbH's".
  - In het *PGL-ISO - QUALITY HANDBOOK (8-NYP-84)* staat beschreven, ik citeer; *Scope 1.1 General*: "PGL is an organisation that stands for accessibility, quality, privacy, and efficiency in the analysis of Covid-19 PCR testing. Working together with Novogenia

*GmbH laboratory as a reference laboratory, who is currently Europe's leading institution in the PCR analyses industry. PGL offers analysis and results with a turnaround time of 24 hours for up to 20 000 PCR tests per day, along with software, support and explicit communication throughout the analyses process. PGL performs a direct PCR in its own laboratory".*

## 2.3 Kwaliteitsmanagement

De heer 5.1.2.e gaf in het gesprek van 4 november aan dat er voor het laboratorium aan de Olivier van Noortlaan 120 in Vlaardingen geen accreditatie ten behoeve van een KMS op grond van ISO 9001 of ISO 15189 aanwezig is, maar dat er wel gewerkt wordt volgens de vigerende standaarden voor moleculair diagnostische laboratoria. PM houdt daarbij de ISO-norm 15189:2012 aan als leidraad voor het functioneren en handelen. Op basis van de aangeleverde informatie heeft de inspectie het volgende geconstateerd:

- De heer 5.1.2.e gaf aan dat in samenwerking met een extern bureau (Kerteza) het ISO 15189 accreditatie proces is ingezet. Op 19 juni 2021 heeft PM een accreditatieaanvraag ingediend bij de RvA. Deze aanvraag is op 23 augustus 2021 door de RvA geaccepteerd en in behandeling genomen. Het 5.1.2.e RvA heeft nog geen terugkoppeling geven, vragen gesteld of bezoek in gepland, behoudens de melding dat de aanvraag compleet is.
- De indeling van het PM online KMS systeem volgt de hoofdstuknummering van ISO 15189, wat de documentatie overzichtelijk maakt.
- *Review by External Organisations:* PM heeft op 9 oktober 2021 een verklaring van prestatie voor de detectie van SARS-CoV-2 middels RT-PCR op locatie Vlaardingen van het RIVM gekregen.
- Documentbeheersysteem; Het is onduidelijk of een revisiehistorie aanwezig is. Een protocol met de beschreven verantwoordelijkheid/accordering van wijzigingen heeft de inspectie niet gevonden. Onduidelijk hoe is vastgelegd hoe (en of) het personeel wijzigingen in procedures (ter kennisgeving) vernomen heeft.
- Document control; Het PGL-ISO - QUALITY HANDBOOK (8-NYP-84) paragraaf 4.3 geeft aan, ik citeer: "Each paper prescription consists of a header and footer on each page, containing the following information: a title, unique identifier on each page, date and/or issue number, page number of the total number of pages and the version." Dit was in het KMS niet consistent in de documentatie voor de inspectie zichtbaar op 23 november. Bij de deskinsectie van 22 december 2021 waren deze aspecten wel aanwezig.
- Volgens ISO 15189:2012 paragraaf 4.5 moet een laboratorium beschikken over een gedocumenteerde procedure voor het selecteren en evalueren van verwijzingslaboratoria en consultants.
  - In PGL-ISO - QUALITY HANDBOOK (8-NYP-84) paragraaf 4.5 "Examination by referral laboratories" is geen documentatie aangetroffen hoe selectie en evaluatie van het referentie lab en aangetrokken consultants qua procedure uitgevoerd moet worden. De inspectie heeft geen documentatie gevonden waaruit blijkt dat PM beschikt over een dergelijke procedure.
  - De inspectie heeft in paragraaf 4.5 van PGL-ISO - QUALITY HANDBOOK (8-NYP-84) wel (delen van) de uitkomst van een

dergelijke beoordeling voor Novogenia aangetroffen. Beoordeling voor extern aangetrokken deskundige (bijv. MMM) heeft de inspectie niet aangetroffen.

- Kruisverwijzingslijst RvA-PGL (Version 2) verwijst naar document HT-DH-72 in het KMS, dit document is niet aangetroffen tijdens beide deskinspecties.
- Het SARS-CoV-2 analyse proces uitgevoerd door PM in Vlaardingen is niet beschreven in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84). In paragraaf 5.5 "Ensuring the quality of research results" staat beschreven dat om de kwaliteit van de onderzoeksresultaten te waarborgen, de onderzoeksresultaten worden uitgevoerd onder de gedefinieerde voorwaarden die zijn vastgesteld door Novogenia. Ook staat vermeld dat de kwaliteit van de resultaten valt onder de verantwoordelijkheid van Novogenia. PM locatie Vlaardingen wordt voor het analyse proces niet genoemd in het KMS.
- PGL-ISO - QUALITY HANDBOOK (8-NYP-84). Ik citeer: 4.9 "*Identification and control of non-conformities. Non conformities could be established by audits, RI&E.*" De heer 5.1.2.e gaf aan op 4 november 2021 aan dat PM voor het meten van samples in Vlaardingen niet beschikt over een (volledige) risico inventarisatie- en evaluatie (RI&E) betreffende SARS-CoV-2 diagnostiek op GGD samples. Op 22 december 2021 heeft de inspectie in het KMS wel een Failure Mode and Effect log Excel aangetroffen (FMEA pre post analysis PGL 24-44-RH) De heer 5.1.2.e gaf aan op 4 november 2021 aan dat de samples die gemeten worden in Oostenrijk vallen onder de RI&E van Novogenia.
- Tijdens de rondgang door het laboratorium op 4 november 2021 constateerden de inspecteurs dat er geen zichtbare kalibratie datum genoteerd was op de pipetten in het laboratorium. Er is tijdens de KMS beoordeling van 23 november 2021 geen documentatie aangetroffen die een interne procedure voor periodieke controle en/of kalibratie van pipetten vastlegt. Bij de deskinpectie van 22 december 2021 is een dergelijke procedure wel aangetroffen: Logbook Multi-channel pipettes, Version 1 & Multi-Channel Pipettes, WTN-86-V, Version 1.
- Kwaliteitsindicatoren PGL-ISO - QUALITY HANDBOOK (8-NYP-84). 4.14.7 "Quality indicators" Er is tijdens de KMS beoordeling op 23 november 2021 geen documentatie gevonden die een interne procedure voor monitoring vastlegt. Bij de deskinpectie van 22-december 2021 is dit wel aangetroffen: Internal Audit Procedure; 4-MDR-27, Internal audits 2021 to 2022, version 4 & Process Validation SOP 24-JG-QY.

## 2.4 Competenties

De heer 5.1.2.e verklaarde op 14 juli 2021 dat PM op dat moment ongeveer vijftien werknemers in dienst heeft. De inspectie vroeg daarop of de taken, bevoegdheden, verantwoordelijkheden en bekwaamheidseisen voor personeel schriftelijk zijn vastgelegd. De heer 5.1.2.e gaf aan dat dat is opgenomen in het kwaliteitsmanagementsysteem (KMS). De minimale criteria voor het uitvoeren van moleculaire diagnostiek is een moleculair biologische opleiding (MBO, HBO of academisch opgeleid); de medewerkers zijn hoofdzakelijk HBO en hoger opgeleid.

Op basis van de aangeleverde informatie heeft de inspectie het volgende geconstateerd:

- Functie-eisen en competenties vakinhoudelijk verantwoordelijke waren op 23 november 2021 niet in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84) handboek terug te vinden. Bij de deskinspectie van 22 december 2021 is een beknopte omschrijving in het KMS terug te vinden in het document Job Descriptions (Version 2, 88-TQ-CR).
- In hoofdstuk 5 paragraaf 5.1.2 Personnel Qualifications & 5.1.3. Job descriptions: In het Quality handbook staat de volgende zin opgenomen over de functieomschrijvingen en kwalificaties: *"Qualifications of personnel are documented in job descriptions", "The job descriptions can be found in the document management system under document "Job descriptions" in the folder Overall regulations for working at PGL."* Dit document heeft de inspectie tijdens de beoordeling van het KMS in de ochtend van 23 november 2021 niet in online (in Zenya) aangetroffen. Bij de deskinspectie van 22 december 2021 was dit document aanwezig in het KMS (88-TQ-CR). *Functie-eisen en competenties.* Bij de beoordeling van het KMS, in de ochtend van 23 november 2021, heeft de inspectie geen documentatie aangetroffen die betrekking heeft op functie-eisen, scholing en/of competenties. On-the-job (OTJ) Training Program Training and Introduction of New Lab Assistants (NQ-27-VD) geeft een summiere hoog over introductie maar bevat geen zaken als:
  - Een procedure voor de aanwerving van personeel.
  - Een procedure voor de opleiding, de evaluatie van de competentie en de continue opleiding van personeel.
  - Een procedure met betrekking tot het bijhouden van de dossiers betreffende tot de opleiding, kennis en vaardigheden van alle personeelsleden

## 2.5 Laboratorium

### 2.5.1 Inrichting

Op verzoek van de inspectie heeft PM twee laboratorium ruimtes getoond op 4 november 2021. In de eerste ruimte vindt monstervoorbereiding plaats. In dit lab waren zuur-, koel- en vrieskasten, centrifuges en RNA extractie apparatuur aanwezig. In een laboratoriumruimte verderop de gang werd de amplificatie en detectie gedaan middels een geïntegreerd PCR systeem. Deze ruimte werd ook gebruikt voor opslag materiaal. Beide laboratoria zijn van elkaar gescheiden en afsluitbaar.

### 2.5.2 Worden de juiste veiligheidsvoorschriften gehanteerd bij de werkzaamheden?

De aanleiding voor het inspectiebezoek van 14 juli 2021 lag niet alleen bij veiligheid betreffende de naleving van veiligheidsvoorschriften maar ook arbeidsomstandigheden. De inspectie realiseert zich dat een inspectiebezoek een momentopname is. Daarentegen geeft een bezoek wel een eerste indruk van de arbeidscultuur, faciliteiten, gebruikte materialen en denkwijze. Betreffende de gehanteerde veiligheidsvoorschriften voor de omschreven werkzaamheden vielen enkele zaken op, namelijk:

#### *Algemeen*

- Laboranten droegen een laboratoriumjas en handschoenen.
- Het laboratorium maakte een schone, goed georganiseerde en rustige indruk.

- Etikettering van de gebruikte reagentia; De gebruikte vloeistoffen, 70% alcohol en Guanidine thiocyanat lysis buffer stonden beide in een plofkast met afzuiging en waren correct en volledig gelabeld.
- Voor aerosol vormende handelingen maakt PM gebruik van zuurkasten.
- Bij het uitpakken van de monsters werd er absorberend papier op de laboratoriumtafel gelegd.
- Afvalstroom; Het afval van het gehele proces gaat in WIVA vaten, er wordt geen onderscheid gemaakt tussen potentieel besmettelijk en "schoon" afval.

#### *SARS-CoV-2 analyse*

- PM heeft een aparte ruimte voor verwerking van patiënten materialen en pre-amplificatiehandelingen (RNA isolatie).
- In een separate tweede ruimte vindt de reverse transcriptase, nucleïnezuur-amplificatie en detectie plaats. Deze stappen vinden plaats in een gesealde 96-wells plaat.
- PM geeft aan dat kwaliteitscontrole op temperatuur gevoelige reagentia geschiedt d.m.v. data loggers op koel- en vrieskasten. De inspectie heeft dat niet geverifieerd.
- De gesealde PCR platen worden afgevoerd in kunststof vaten voor ziekenhuisafval.
- Een laborant droeg geen veiligheidsbril bij pipetteerhandelingen en het veiligheidsglas van de zuurkast stond niet naar beneden.
- Er werd aangegeven dat schoonmaken met 70% alcohol gebeurt. Dit is volgens de inspectie niet correct. Het aangeleverde protocol spreekt over schoonmaak met isopropyl alcohol (IPA). Hier is een opmerking over gemaakt.
- Oogdouche was niet aanwezig. Hier is een opmerking over gemaakt.
- Er is geen protocol/veiligheidsvoorschrift voor het gebruik van oogdouches op het laboratorium aanwezig
- Ongebruikte teruggekomen buizen die gelekt hebben werden ook bewaard in een zak in de plofkast voor mogelijk hergebruik. Hier is een opmerking over gemaakt.

Op 18 augustus 2021 heeft PM aan de inspectie schriftelijk laten weten n.a.v. bovenstaande opmerkingen inmiddels enkele aanpassingen te hebben doorgevoerd, zoals het bestellen van veiligheidsbrillen.

- Een algemene procedure voor het *beleid inzake administratief beheer en gebruik van laboratoriumapparatuur* (met name de apparatuur voor moleculaire diagnostiek) was tijdens de rondgangen niet aanwezig om de vraag te beantwoorden wie voldoende gekwalificeerd is voor gebruik. Procedures per apparaat die de implementatie beschrijven (bv. de wijze waarop, hoe vaak en door wie de kwalificaties worden uitgevoerd, de wijze van rapporteren, registeren en archiveren, inclusief door wie, en de verantwoordelijken) waren niet of onvoldoende aanwezig tijdens de rondgang. Ook tijdens de deskinspecties is deze informatie niet aangetroffen in het KMS.

## **2.6 Gebruikte medische hulpmiddelen**

Tijdens het gesprek van 4 november 2021 gaf de heer 5.1.2.e aan dat alle gebruikte apparatuur en reagentia op de locatie Vlaardingen CE-IVD zijn gemarkeerd. Als antwoord op het verzoek van de inspectie aan PM om een verificatie rapport toe te sturen en een tabel met alle gebruikte apparatuur en reagentia, ontving de inspectie op 18 november 2021 van de heer 5.1.2.e een document waarin een workflow (nr.

3) voor SARS-CoV-2-analyse wordt omschreven. De genoemde gebruikte materialen en reagentia in dit document zijn:

Item	Type	Fabrikant
<b>Novogenia</b>		
Qiagen Biorobot Universal/Quick viral kit ( Zymo research)	RNA isolatie	Qiagen
PhoenixDx® 2019-nCoV RNA Detection Kit /	RT-PCR reagentia	Procomcure Biotech GmbH
Analitica REALQUALITY RQ-2019-nCoV.		AB ANALITICA s.r.l., IT
Viaa 7	Amplificatie & Detectie	Thermo Fisher Scientific
<b>Pure Medical workflow 3</b>		
MagMAX™ Viral/Pathogen II Nucleic Acid Isolation, & King Fisher FLEX purification system	CE-IVD; RNA isolatie	Thermo Fisher Scientific
Thermo Fisher TaqPath Covid-19 RT-PCR Kit	CE-IVD; RT-PCR reagentia	Thermo Fisher Scientific Applied Biosystems™
QuantStudio™5 Real-Time PCR Instrument	Research only, Amplificatie & Detectie	Thermo Fisher Scientific, Applied Biosystems™

Op 15 december 2021 heeft de inspectie aan de heer 5.1.2.e het verzoek gedaan voor het aanleveren van kopieën/foto's van CE-IVD markeringen op de voor workflow drie gebruikte reagentia & apparatuur op de locatie Vlaardingen. Aanvullende informatie, ontvangen op 22 december 2021, laat zien dat PM voor workflow drie voor RNA isolatie en RT-PCR gebruik maakt van CE-IVD kits. Voor amplificatie en detectie maakt PM gebruik van een QuantStudio™5 Real-Time PCR Instrument. Deze machine is in de markt gezet als "For Research, Forensic, or Paternity Use Only".

## 2.7 Keuze, verificatie en validatie van onderzoeksmethoden

### *Novogenia*

PM maakt grotendeels gebruik van de workflow van Novogenia. Op 3 augustus 2021 ontving de inspectie een validatierapport van een van de Novogenia workflows; *SARS-CoV-2 workflow validation 12\_2020 V1*. Ook ontving de inspectie een presentatie waarin Novogenia validatiestappen beschrijft van vier verschillende workflows namelijk:

1. *Phoenix DX SARS-CoV-2 (CE-IVD, Procomcure)*
2. *Realquality SARS-CoV-2 (CE-IVD, AB Analitica)*
3. *RIDAGENE SARS-CoV-2 RUO (RESEARCH USE, r-biopharm)*
4. *Phoenix DX SARS-CoV-2 (RESEARCH USE, Procomcure)*

### *PM Vlaardingen*

PM geeft tijdens het gesprek van 4 november 2021 aan dat op de locatie Vlaardingen gebruik te maken van vier verschillende workflows en dat de betreffende workflows



zijn geverifieerd. Op het verzoek van de inspectie aan PM om een verificatie rapport toesturen en ontving de inspectie op 18 november 2021 een document waarin een workflow(nr.3) voor SARS-CoV-2-analyse op de locatie Vlaardingen geverifieert (implementatievalidatie) wordt tegen die van Novogenia (bijlage 9). Op basis van de Kruisverwijzingslijst RvA-PGL (bijlage 13) en het KMS constateert de inspectie dat PM beschikt over onderstaande geverifieerde workflows:

1. *Workflow 1 Bio Echo - Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit (Verification Report; MV-52-KB)*
2. *Workflow 2 Bio Echo – BAG ViroQ Rapid SARS-CoV-2 (Verification Report; 66-HG-22)*
3. *Workflow 3- KingFisher -Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit (Verification Report; 4-BJY-65)*
4. *Workflow 4- KingFisher - BAG (Verification Report; 6-RQT-68)*

Tijdens de deskinspectie van het KMS op 22 december 2021 maakt de inspectie uit het KMS op dat PM voor alle vier workflows voor RNA isolatie en RT-PCR gebruik maakt van CE-IVD kits. Voor amplificatie en detectie maakt PM gebruik van een QuantStudio™5 Real-Time PCR Instrument (*research use only*). PM heeft een procedure Verification plan SARS-COV-19 (2); (doc 6-QQJ-72). Verificatie van deze vier workflows is gedaan tegen een gevalideerde workflow van Novogenia.

PM geeft zelf aan dat er geen spraken is van in-huis ontwikkelde testen. De inspectie heeft hier geen nader onderzoek naar uitgevoerd.

#### 2.7.1

##### *Verloopt SARS-Cov-2 analyse in Vlaardingen volgens geldende normen?*

Zorgverleners hebben als taak om een systeem van interne kwaliteitscontrole in te voeren. Bij het herbezoek van 4 november 2021 en bij de deskinpectie van het KMS heeft de inspectie onderzocht welke maatregelen er zijn getroffen om zo goed mogelijk te garanderen dat de analyseresultaten op de locatie Vlaardingen betrouwbaar zijn. PM gaf aan dat er procedures zijn vastgelegd waaraan de kwaliteitscontroles moeten voldoen en dat er een procedure is om vrijgave van patiënten resultaten in geval van een afwijking in de kwaliteitscontrole te voorkomen. Op basis van de aangeleverde informatie en het KMS heeft de inspectie het volgende geconstateerd:

- *Externe kwaliteitsevaluatie.* PM gaf aan dat zij voor de externe kwaliteitsbewaking deelneemt aan de RIVM rondzendingen en periodieke verificatie bij Novogenia uitvoert. PM heeft op 9 oktober een verklaring van prestatie voor de detectie van SARS-CoV-2 middels RT-PCR van het RIVM gekregen.
- Een procedure voor externe (periodieke) kwaliteitsevaluatie is niet aanwezig in het KMS.
- Voor moleculaire diagnostiek legt een laboratorium criteria vast voor de meetonzekerheid. Het KMS bevat de bepaling van workflow drie. (MagMAX/ KingFisher™ /TaqPath™) Analytical Sensitivity – LOD (doc.Y-268-GV). Een procedure over hoe de meetonzekerheid bepaald wordt en hoe dit periodiek geborgd/opnieuw beoordeeld wordt is niet (volledig) aanwezig voor de vier beschreven workflows in het KMS.
- PM gaf aan over een procedure te beschikken waarmee voorkomen wordt dat patiëntresultaten worden vrijgegeven in het geval dat de kwaliteitscontrole resultaten ondermaats zouden zijn. Kruisverwijzingslijst

RvA-PGL verwijst naar KMS document: 8-NYP-84. Dit document is niet aangetroffen in het KMS op 22 december 2021. Op deze datum was wel een procedure *Automatic Acceptance Criteria (Version 1, BYH-84-H, publicatiedatum 23-11-2021)* aanwezig in het KMS.

#### 2.7.2 Verlopen pre- en postanalyse en transport volgens geldende normen?

In het laboratorium in Vlaardingen wordt monstervoorbereiding gedaan ten behoeve van de uitvoering van SARS-CoV-2 diagnostiek door Novogenia. De inspectie heeft geconstateerd dat potentieel aerosolvormende handelingen in een zuurkast gebeuren. Dit zijn het uitvullen van (Guanidine thiocynaat) lysisbuffer en het overpipetteren van lysisbuffer met swab samples afkomstig van GGD. PM gaf aan dat deze werkwijze, waarbij de lysisbuffer al in de buis zit als de monsterstok erin wordt geplaatst, de kans op besmetting van personeel minimaliseert. Eventueel aanwezig infectieus materiaal is al geïnactiveerd op het moment dat de buizen bij het laboratorium arriveren. De buizen inclusief de monsters worden van de GGD'en vervoerd naar Pure Medical door een gecertificeerde koerier als 'category B infectious substance UN 3373'. PM maakt gebruik van een barcode-gecodeerd systeem (Micronic) voor digitale identificatie van de samplebuis. Deze wordt gekoppeld via een order nummer aan de GGD barcode/informatie. Samples worden in afgesloten 96-wells platen uitgevuld en per vliegtuig naar Novogenia in Oostenrijk verzonden. Uitslagen afkomstig van Novogenia worden via een beveiligde digitale verbinding teruggestuurd naar PM en automatisch gekoppeld aan CoronIT

- Het KMS bevat een procedure voor Transport of samples: Courier procedure (8-VPR-22 en 62-QK-HR.)
- Het KMS bevat een procedure Sample communication and management and server communication PGL to GGD (SOP GK-558-H - Server Communication PGL-GGD).
- In het kader van AVG heeft PM een externe Data Protection Impact Assessment (DPIA) laten uitvoeren (document 46-TV-KT).
- *Opslaan, bewaren en afvoeren van medische monsters*; Het KMS bevat een gedocumenteerde procedure voor de verzameling, de opslag en de veilige verwijdering van GGD samples met Guanidine thiocynaat op de locatie Vlaardingen. (Medical waste V1, 65-KB-WC)
- De aangeleverde documentatie bevat een wetenschappelijk artikel over inactivatie van het virus door Guanidine thiocynaat. PM heeft geen documentatie overhandigd waaruit blijkt dat de samenstelling van de gebruikte lysisbuffer overkomt met het beschreven wetenschappelijke artikel en dat (volledige) virus inactivatie via deze procedure geborgd is.
- Procedure van het luchtwegtransport van Vlaardingen naar Oostenrijk. De inspectie heeft geen procedure in het KMS aangetroffen waaruit blijkt dat het transport van de GGD samples geborgd en afgestemd is op:
  - Een tijdsbestek voor de SARS-CoV2 analyse en het beleid gevoerd door Novogenia.
  - Binnen een bepaald temperatuursinterval.
  - De optimale omstandigheden/conserveringsmiddelen/verpakking die de integriteit van het sample, de veiligheid van de transporteur en het de wettelijke eisen ontvangende laboratorium waarborgen (conform richtlijnen en/of wetgeving Oostenrijk).
- Er is geen validatie procedure of documentatie overlegd waaruit blijkt dat het transport per vliegtuig geen effect heeft op stabiliteit van het analyte.

## 2.8

### Vigilantie

De inspectie constateert dat wat betreft *Adverse incident reporting en Calamiteiten* in het PM PGL-ISO-QUALITY HANDBOOK (8-NYP-84) staat beschreven dat reagentia en disposables met mogelijke non-conformiteiten uit de workflow worden gehaald en dat de fabrikant over de mogelijke non-conformiteit geïnformeerd wordt.

- Complaints & Non-Conformities (Version 1) logboek is aanwezig in het KMS
- Calamiteitenprocedure voor incidenten in het laboratorium is aanwezig.
- Een procedure voor het omgaan met non-conformiteiten van reagens and consumables is niet aanwezig in het KMS.
- Procedures omtrent het omgaan met signalen van incidenten dan wel het melden van incidenten/calamiteiten bij inspectie zijn niet aanwezig in het KMS.

## 2.9

### Continuïteit en opschaling

PM gaf tijdens het gesprek van 4 november 2021 aan dat voor SARS-CoV-2-diagnostiek op locatie Vlaardingen gebruik wordt gemaakt van vier verschillende workflows om continuïteit te borgen, zoals verzocht door Dienst Testen. PM gaf verder aan dat zij voor de externe kwaliteitsbewaking deelneemt aan de RIVM rondzendingen en periodiek verificatie bij/door Novogenia uitvoert. De heer 5.1.2.e gaf tijdens het inspectiebezoek van 14 juli aan dat een maximale capaciteit van 20.000 monsters per dag mogelijk is, maar dat er gemiddeld 7.000 monsters per dag verwerkt worden. In de email van de heer 5.1.2.e op 18 november aan de inspectie is een Excel bestand bijgevoegd waarin PM aangeeft dat er tussen week 41 en week 46 van dit jaar SARS-CoV-2 diagnostiek uitgevoerd is op 192.321 GGD samples, wat neerkomt op gemiddeld 6400 samples/dag (5 dagen week).

## 3 Conclusies

In het kader van haar toezichthoudende taak bracht de inspectie op 14 juli een inspectiebezoek en op 4 november 2021 een herbezoek aan Pure Medical B.V. (PM) op de locatie aan de Olivier van Noortlaan 120 in Vlaardingen. Aanleiding voor deze bezoeken waren 5.1.2.i

Gezien de rol en taakstelling van de inspectie en in het belang van veilige en goede zorg heeft de inspectie onderzocht of PM wat betreft de zorgverlening door middel van haar PCR laboratorium voldoet aan de Wkkgz.

Het niet op orde hebben van het diagnostisch proces leidt tot een verhoogde kans op fout-positieve of fout-negatieve uitslagen, waardoor cliënten onterecht denken besmet te zijn, respectievelijk onterecht denken niet besmet te zijn. Dit kan ernstige risico's voor de (individuele) volksgezondheid opleveren. Immers, dit kan leiden tot vertragingen bij het stellen van de juiste diagnose en behandeling van COVID-19.

### 3.1 Uitgevoerde SARS-CoV-2 analyses bij Novogenia, Oostenrijk

Uit het eerste inspectiebezoek van 14 juli 2021 heeft de inspectie vernomen dat PM heeft gekozen voor de constructie van het separaat afnemen van nasofaryngeale swabs door GGD, monstervoorbereiding zelf in Nederland uit te voeren en de daadwerkelijke bepaling bij een extern laboratorium voor moleculaire SARS-CoV-2-diagnostiek: Novogenia gevestigd in Oostenrijk. Gezien de aard van de melding waarop het bezoek geïnitieerd was en het feit dat de laboratoria van Novogenia buiten ons toezicht vallen (Oostenrijk), lag het zwaartepunt van het eerste inspectiebezoek met name bij de pre- en postanalyse handelingen van PM in Vlaardingen.

De handelingen voor het PM lab in Vlaardingen beperkten zich tot het pipetteren en omverpakken van niet-exacte hoeveelheden niet-besmettelijk materiaal. Voor deze handelingen zijn de competenties van het personeel en de faciliteiten van PM in Vlaardingen zoals waargenomen op 14 juli 2021 voldoende. De daadwerkelijke nasofaryngeale SARS-CoV-2 analyse d.m.v. RNA extractie en rtPCR werd uitgevoerd door Novogenia, een ISO 15189 geaccrediteerd laboratorium. Dit laboratorium is door het RIVM erkend als Medisch-Microbiologisch laboratorium (MML) voor SARS-CoV-2 diagnostiek. De diagnostiek werd uitgevoerd in afstemming en onder contract met VWS (Dienst Testen). Voor snelle en veilige rapportage van uitslagen werd gebruik gemaakt van een digitaal beveiligde omgeving, en op een manier waardoor de privacy van de klant gewaarborgd wordt.

### 3.2 Uitgevoerde SARS-CoV-2 analyse bij PM in Vlaardingen

Uit het 2e inspectiebezoek van 4 november 2021 komt naar voren dat PM sinds medio 2021 heeft gekozen voor de constructie om een gedeelte van de GGD nasofaryngeale swab samples in Vlaardingen te analyseren en een gedeelte bij Novogenia. Deze situatie is wezenlijk anders ten opzichte van de situatie zoals de inspectie aantrof tijdens het bezoek van 14 juli 2021, waar de handelingen van PM zich beperkten tot monstervoorbereiding. Omdat PM in deze nieuwe situatie ervoor heeft gekozen om zelf de analyse van GGD samples op SARS-CoV-2 uit te voeren, heeft de inspectie bij dit herbezoek PM getoetst op conformiteit aan de eisen die gesteld worden aan een laboratorium voor moleculaire SARS-CoV-2-diagnostiek.

Daarbij is specifiek gekeken naar veldnormen, ISO-normen en richtlijnen (nrs. 3 t/m 6?, hoofdstuk 1.2.3.) die invulling geven aan de wetgeving (nrs 1 en 2).

De IGJ classificeert het PM lab in Vlaardingen als een Niet-Medisch laboratorium (NML) zonder accreditatie ten behoeve van een KMS op grond van ISO 9001 of ISO 15189. Verder concludeert de inspectie dat PM Vlaardingen geen moleculaire SARS-CoV-2-diagnostiek uitvoert in opdracht van Novogenia. Het PM laboratorium Vlaardingen is dus geen gedelegeerd lab onder toezicht/accreditatie van Novogenia. Dit brengt extra risico's met zich mee omtrent de veiligheid en betrouwbaarheid van de verrichte bepalingen en is volgens de geldende richtlijnen (*zie hoofdstuk 1.2.3. nr. 3; NVMM kwaliteitsdocument COVID-19*) niet wenselijk. De vraag is dan ook of het laboratorium in Vlaardingen in de huidige situatie in voldoende mate voldoet aan de verplichtingen om goede zorg aan te bieden (artikel 2 Wkkgz). Zorg die op zodanige wijze georganiseerd is dat een en ander redelijkerwijs moet leiden tot het verlenen van goede zorg (artikel 3 Wkkgz). Uit de verkregen informatie concludeert de IGJ dat PM dit zowel intern als extern gestructureerd aanpakt. Kenmerkend hiervoor is dat:

- Kwaliteitsmanagement: De documentatie in het KMS systeem volgt inhoudelijk de ISO normering 15189. In samenwerking met een extern adviesbureau (Kerteza) is begin 2021 het ISO 15189 accreditatieproces ingezet. Deze is eind 2021 door de RvA geaccepteerd en in behandeling genomen. Hoewel dit nog niet betekent dat het KMS ook voldoet aan de norm, geeft het wel aan dat de noodzaak van een goed KMS wordt ingezien door PM.
- De inhoudelijke en medische eindverantwoordelijkheid: van de SARS-CoV-2-diagnostiek wordt geborgd door zowel de (delegerend) 5.1.2.e [REDACTED] MMM) Dr. 5.1.2.e [REDACTED] en de verbonden MMM van Novogenia. Het is aannemelijk dat beide partijen inhoudelijk en medisch bekwaam zijn om verantwoordelijkheid voor de kwaliteit- en medische autorisatie van de uitkomsten te dragen.
- PM is qua werkprocessen sterk verweven met Novogenia: Dit lab is ISO15189 geaccrediteerd voor de te gebruiken laboratoriumtechnieken (moleculaire diagnostiek d.m.v. amplificatie technieken) en kan daardoor SARS-CoV-2-diagnostiek aanbieden. De vier beschreven workflows van PM Vlaardingen zijn geverifieerd tegen de gevalideerde workflows van Novogenia.
- Externe verificatie: de verkregen verklaring van prestatie voor de detectie van SARS-CoV-2 middels RT-PCR op locatie Vlaardingen. Deze verklaring is afgegeven door het RIVM op 9 oktober 2021 en wordt periodiek gecontroleerd middels rondzendingen.
- Continuïteit en opschaling: Door het hebben van vier workflows en de samenwerking met Novogenia voldoet PM aan door het Dienst Testen opgestelde eisen voor SARS-CoV-2-diagnostiek betreffende continuïteit en opschaling.

Daarentegen concludeert de inspectie dat PM een organisatie is met een moleculair laboratorium in opbouw. Dat het niet alleen een ontwikkeling doormaakt op het gebied van de uitvoering van SARS-CoV-2 diagnostiek maar ook op kwaliteitsmanagement conform ISO 15189. Hoewel uit de toegezonden informatie en de deskinspectie van 23 november 2021 de inspectie concludeerde dat de basisstructuur zoals beschreven is ISO 15189-2012 grotendeels aanwezig was in het KMS, waren er op enkele van deze onderdelen ook onvolkomenheden. Het gaat

hierbij om in hoofdstuk 2 beschreven discrepanties, onvolledige of ontbrekende documenten (zie bijlage 2 voor verbeterplan/acties). Het lerend vermogen van PM kenmerkt zich doordat bij een vervolg deskinspectie op 22 december 2021 de missende documenten in het KMS grotendeels aangevuld waren. Op 5 januari 2022 heeft de inspectie aan PM een conceptrapportage verzonden met de feitelijke bevindingen van de uitgevoerde inspecties zoals beschreven in hoofdstukken 1 en 2. PM reageerde op 19 januari 2022 met een schriftelijk bevestiging en een verbeterplan waarin de resterende openstaande acties betreffende het KMS al merendeels uitgevoerd waren of geïnitieerd zijn (zie bijlage 2).

*Opmerking: Bij de schriftelijke bevestiging op 19 januari 2022 merkt PM ook op dat bij nader intern onderzoek is gebleken dat sommige mappen en documenten nog niet zichtbaar waren gemaakt voor inzage door de inspectie in het online toegekende domein. Hierdoor is niet te achterhalen of de beschreven ontbrekende documenten en onvolkomenheden al aangevuld/aangepast waren ten tijde van de 2<sup>e</sup> deskinspectie van 22 december 2021.*

### **3.3 Algemene conclusie**

De inspectie heeft naar aanleiding van een aantal meldingen over een periode van zeven maanden meerdere (desk)inspecties uitgevoerd bij PM om een beeld te krijgen van de kwaliteit van de geleverde zorg. De inspectie concludeert dat PM een organisatie is die zich beperkt tot enkel moleculaire SARS-CoV-2 diagnostiek. Verder is de inspectie van mening dat het zorgelijk is dat Pure Medical zelf SARS-CoV-2 diagnostiek in Vlaardingen is gaan uitvoeren terwijl het KMS destijds nog onvolledig was. Daarentegen heeft PM Vlaardingen laten zien dat de moleculaire SARS-CoV-2 diagnostiek op de locatie Vlaardingen redelijkerwijs voldoet aan de minimale criteria zoals die gesteld zijn door het ministerie van VWS in de Europese aanbesteding moleculaire diagnostiek SARS-CoV-2. Ook is de inspectie van mening dat ondanks dat PM Vlaardingen geen gedelegeerd lab onder toezicht van Novogenia is, de samenwerking aantoonbaar sterk is dat geleverde kwaliteit door PM redelijkerwijs voldoet aan de veldnormen voor moleculair diagnostische laboratoria zoals beschreven in hfdst. 1.2.3. De inspectie heeft voor zowel de workflow met Novogenia als de interne procedure voor moleculaire SARS-CoV-2 diagnostiek op de locatie Vlaardingen voldoende vertrouwen in PM tot het verlenen van goede zorg.



## Bijlage 1: Geraadpleegde documentatie

Document	Document titel	versie
1	20211207 Website Screenshots Pure Medical	nvt
2	Gesprekverslag 14 juli 2021	2
3	Gesprekverslag 4 november 2021	2
4	PGL-ISO - QUALITY HANDBOOK (8-NYP-84)	Version 2
5	Pure Medical PCR analyse overzicht	nvt
6	SOP - Sample management & communication	Version 1
7	RIVM certificaat	
8	Pure Medical Zenya screenshots intern document	nvt
9	Validation Report - Workflow 3- KingFisher - Thermo Fisher TaqPath Covid-19 CE-IVD RT-PCR Kit	onbekend
10	Viral Transport Media Virus Inactivation SARS CoV 2.pdf	nvt
11	SARS-CoV-2 workflow validation 12_2020	1
12	SARS-COV-2 VALIDATION FILE. ppt	nvt
13	Kruisverwijzingslijst RvA -PGL	Version 2
14	Roles and Responsibilities Chart (KH-QP-65)	Version 1

## Bijlage 2: Verbeterplan KMS

KMS cat.	Onvolledige/ontbrekende documentatie KMS waargenomen bij deskinspectie op 23 november 2021	Verklaring PM op corrigeerde KMS documentatie 22-1-2022
Bestuur & Verantwoordelijk	Organisatiestructuur zoals beschreven in de Organisation Chart PGL en Roles and Responsibilities Chart (KH-QP-65) komt niet overeen met de organisatiestructuur zoals beschreven in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84).	Nieuwe versie van het KHB versie 3. Bijlage 4.01a PGL performs a direct PCR in its own laboratory. De scope en visie document is aangepast
	Moleculair bioloog en arts microbioloog zijn niet opgenomen in de Roles and Responsibilities Chart van het PGL-ISO - QUALITY HANDBOOK (8-NYP-84).	Is vervallen, nu is alleen valide de "organization charge PGL "Nieuwe versie 3 van het KHB. Bijlage 4.01a
	Roles and Responsibilities Chart is het SARS-CoV-2 pre-analytisch proces en het post-analytisch proces beschreven. Moleculaire "SARS-CoV-2 diagnostiek uitgevoerd op PM locatie Vlaardingen (extractie & RT-PCR)" en "sample reporting" zijn door de inspectie niet aangetroffen in de chart.	Er zijn twee procesbeschrijvingen in het handboek aanwezig. Nieuwe versie 3 van het KHB. Bijlage 4.01a
	De inspectie vroeg daarop of het uitvoeren van SARS-CoV-2 diagnostiek in het laboratorium in Vlaardingen in overeenstemming is met het contact van Dienst Testen	Reactie PM: We voeren uit conform contact. Er is regelmatig overleg door onze CEO met de dienst testen over testen in eigen beheer.
Kwaliteitsmanagement	<ol style="list-style-type: none"> <li>Document control; uniformiteit in vastlegging.</li> <li>Documentbeheersysteem; Het is onduidelijk of een revisiehistorie aanwezig is. Een protocol met de beschreven verantwoordelijkheid /accordering van wijzigingen heeft de inspectie niet gevonden. Onduidelijk hoe is vastgelegd hoe (en of) het personeel wijzigingen in procedures (ter kennisgeving) vernomen heeft (pag10).</li> </ol>	<p>(1);Bij de deskinspectie van 22 december 2021 waren deze aspecten wel aanwezig.</p> <p>(2);Het documentbeheerssysteem zorgt daarvoor en dat is beschreven in het document management. Revisie beleid en leesbevestiging is daarin vastgelegd.</p>
	<ol style="list-style-type: none"> <li>In PGL-ISO - QUALITY HANDBOOK (8-NYP-84) paragraaf 4.5 "Examination by referral laboratories" is geen documentatie aangetroffen hoe selectie en evaluatie van het referentie lab en aangetrokken consultants qua procedure uitgevoerd moet worden</li> <li>Selectie en evaluatie; Kruisverwijzingslijst RvA-PGL (Version 2) verwijst naar document HT-DH-72 in het KMS, dit document is niet aangetroffen tijdens beide deskinspecties</li> </ol>	<p>(1);PM geeft aan; De criteria zijn vastgelegd en de beoordeling heeft plaats gevonden</p> <p>(2);Staat in het systeem 4.5 audit rapport Novogenia (HT-DH-72)(&amp; kruisverwijzingslijst versie 3)</p>
	De scope, zoals beschreven in PGL Vision and Mission Document (Version 1) komt niet overeen met de scope zoals beschreven in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84)	<p>De scope en visie document is aangepast; <i>PGL performs a direct PCR in its own laboratory</i></p> <p>Tot de accreditatie wordt dit dubbel gedaan voor verificatie van de workflow. Heeft de goedkeuring van VWS.</p>
	Het SARS-CoV-2 analyse proces uitgevoerd door PM in Vlaardingen is niet beschreven in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84).	Er zijn twee procesbeschrijvingen in het handboek aanwezig. Nieuwe versie 3 van het KHB. Bijlage 4.01a

	Paragraaf 5.5 "Ensuring the quality of research results" staat beschreven dat om de kwaliteit van de onderzoeksresultaten te waarborgen, de onderzoeksresultaten worden uitgevoerd onder de gedefinieerde voorwaarden die zijn vastgesteld door Novogenia. Ook staat vermeld dat de kwaliteit van de resultaten valt onder de verantwoordelijkheid van Novogenia. PM locatie Vlaardingen wordt voor het analyse proces niet genoemd in het KMS	Er zijn drie RIE uitgevoerd : een voor het pre-analytisch proces, een voor het analytisch proces, en een overall door een Externe veiligheidsdeskundige. Bijlage Bijlage 4.14b Aangepast in KHB versie 5.
	PGL-ISO - QUALITY HANDBOOK (8-NYP-84). Ik citeer: 4.9 "Identification and control of non-conformities. Non conformities could be established by audits, RI&E." De heer 5.1.2.e gaf aan op 4 november 2021 aan dat PM voor het meten van samples in Vlaardingen niet beschikt over een (volledige) risico inventarisatie- en evaluatie (RI&E) betreffende SARS-CoV-2 diagnostiek op GGD samples	Er is een algemene RIE gemaakt door 5.1.2.e . Er zijn twee RIE gemaakt een van het pre-analytisch proces en een van het analytisch proces. Bijlage 4.14b FMEA analysis PGL 20220105 (4.14b Risk analysis reports)
	Geen documentatie aangetroffen die een interne procedure voor periodieke controle en/of kalibratie van pipetten vastlegt	Bij de deskinpectie van 22 december 2021 is een dergelijke procedure wel aangetroffen: Logbook Multi-channel pipettes, Version 1 & Multi-Channel Pipettes, WTN-86-V, Version 1. Aanwezig bij deskinpectie op 22 december 2021
	(1) Kwaliteitsindicatoren PGL-ISO - QUALITY HANDBOOK (8-NYP-84). 4.14.7 "Quality indicators" Geen documentatie gevonden die een interne procedure voor monitoring vastlegt. (2) Een procedure voor externe (periodieke) kwaliteitsevaluatie is niet aanwezig in het KMS.	(1);Bij de deskinpectie van 22-december 2021 is dit wel aangetroffen: Internal Audit Procedure; 4-MDR-27, Internal audits 2021 to 2022, version 4 & Process Validation SOP 24-JG-QY.  (2);Document: "External quality control procedure"; Ensuring quality of examination  PM: Tot accreditatie wordt dit dubbel gedaan voor verificatie van de workflow. Heeft de goedkeuring van VWS.
Competenties	Functie-eisen en competenties vakinhoudelijk verantwoordelijke waren op 23 november 2021 niet in het PGL-ISO - QUALITY HANDBOOK (8-NYP-84) handboek terug te vinden	Aanwezig bij deskinpectie op 22 december 2021. Omschrijving in het KMS terug te vinden in het document Job Descriptions (Version 2, 88-TQ-CR). PM reactie: De uitgebreide functie beschrijvingen stonden er in. (4.01a Job descriptions)
Laboratorium	Voor moleculaire diagnostiek legt een laboratorium criteria vast voor de meetonzekerheid. Het KMS bevat de bepaling van workflow 3. (MagMAX/ KingFisher™ /TaqPath™) Analytical Sensitivity – LOD (doc.Y-268-GV). Een procedure over hoe de meetonzekerheid bepaald wordt en hoe dit periodiek geborgd/opnieuw beoordeeld wordt is niet (volledig) aanwezig voor de 4 beschreven workflows in het KMS.	(PM) VWS eiste een complete verificatie. De andere workflows waren voldoende als we een klinische vergelijking konden laten zien met het referentie lab. Aanvullende informatie, ontvangen op 22 december 2021, laat zien dat PM voor workflow 3 voor RNA isolatie en RT-PCR gebruik maakt van CE-IVD kits. Apparatuur is geverifieerd voor diagnostiek.
	PM gaf aan over een procedure te beschikken waarmee voorkomen wordt dat patiëntresultaten worden vrijgegeven in het geval dat de	PM; Document is aanwezig: "Releasing results"; Bijlage 5.09 Release of results

	<p>kwaliteitscontrole resultaten ondermaats zouden zijn. Kruisverwijzingslijst RvA-PGL verwijst naar KMS document: 8-NYP-84. Dit document is niet aangetroffen in het KMS op 22 december 2021</p>	
	<p>De aangeleverde documentatie bevat een wetenschappelijk artikel over inactivatie van het virus door Guanidine thiocyanaat. PM heeft geen documentatie overhandigd waaruit blijkt dat de samenstelling van de gebruikte lysisbuffer overkomt met het beschreven wetenschappelijke artikel en dat (volledige) virus inactivatie via deze procedure geborgd is.</p>	Bijlage 5.03b
	<p>Er is geen validatie procedure of documentatie overlegd waaruit blijkt dat het transport per vliegtuig geen effect heeft op stabiliteit van het analyte.</p>	<p>Er zijn talloze vergelijkingen gedaan naar specificiteit en sensitiviteit bij de verschillende workflows . Blijken prima overeen te stemmen met het referentie lab. Monsters worden vervoerd bij kamertemperatuur volgens UN3373 . Buisjes zijn met stoppen afgesloten waardoor bij onderdruk niets kan lekken Bijlage 5.04</p>
Vigilantie	<p>Een procedure voor het omgaan met non-conformiteiten van reagens and consumables is niet aanwezig in het KMS.</p>	Verification of new reagent lots Bijlage 5.03b
	<p>Procedures omtrent het omgaan met signalen van incidenten dan wel het melden van incidenten/calamiteiten bij inspectie zijn niet aanwezig in het KMS.</p>	onbekend



Inspectie Gezondheidszorg en Jeugd  
Ministerie van Volksgezondheid,  
Welzijn en Sport

> Retouradres Postbus 2518 6401 DA Heerlen

Pure Medical B.V. (PGL Finance B.V.)  
T.a.v. de heer 5.1.2.e  
Olivier van Noortlaan 120  
Vlaardingen

Stadsplateau 1  
3521 AZ Utrecht  
Postbus 2518  
6401 DA Heerlen  
T 088 120 50 00  
F 088 120 50 01  
[www.igj.nl](http://www.igj.nl)

**Inlichtingen bij**

[meldpunt@igi.nl](mailto:meldpunt@igi.nl)

**Ons kenmerk**  
5.1.2.e

**Bijlagen**  
Definitief inspectierapport

Datum 02-08-2022  
Onderwerp Definitief inspectierapport

Geachte heer 5.1.2.e ,

Op 14 juli en 21 oktober 2021 heeft de Inspectie Gezondheidszorg en Jeugd (hierna: de inspectie) een bezoek gebracht aan Pure Medical B.V. op de locatie aan de Olivier van Noortlaan 120 te Vlaardingen. De heren 5.1.2.e , 5.1.2.e en ik voerden deze inspecties uit.

Hierop volgend het de inspectie op 23 november en 22 december aanvullende deskinspecties uitgevoerd.

U heeft de inspectie op 18 november en 19 januari 2022 een reactie gegeven ten aanzien van eventuele feitelijke onjuistheden in de concept deelrapportages van het eerste en 2<sup>e</sup> inspectiebezoek.

U ontvangt bij deze brief het definitieve rapport, waarin de conclusies van het bezoek en de daarop volgende deskinspecties zijn toegevoegd.

De inspectie is van mening dat de uitvoering van de SARS-CoV-2 diagnostiek bij PM Vlaardingen volgens geldende wet- en regelgeving voor moleculair diagnostische laboratoria verloopt.

Met deze brief sluit de inspectie daarom het inspectiebezoek.  
Ik vertrouw er op u hiermee voldoende te hebben geïnformeerd.

Met vriendelijke groet,

5.1.2.e



Inspectie Gezondheidszorg en Jeugd  
Ministerie van Volksgezondheid,  
Welzijn en Sport

> Retouradres Postbus 2518 6401 DA Heerlen

Pure Medical B.V.  
t.a.v. de heer 5.1.2.e en de heer 5.1.2.e  
Olivier van Noortlaan 120  
3133 AT VLAARDINGEN  
Nederland

Stadsplateau 1  
3521 AZ Utrecht  
Postbus 2518  
6401 DA Heerlen  
T 088 120 50 00  
F 088 120 50 01  
[www.igj.nl](http://www.igj.nl)

Inlichtingen bij  
5.1.2.e  
[meldpunt@igj.nl](mailto:meldpunt@igj.nl)

Ons kenmerk  
5.1.2.e

Datum  
Onderwerp Definitief rapport

Bijlagen  
1

Geachte heer 5.1.2.e en heer 5.1.2.e,

Bij deze brief ontvangt u het definitieve rapport, waarin de conclusies zijn toegevoegd van:

- het bezoek van de Inspectie op 14 juli en 4 november 2021 aan Pure Medical in Vlaardingen;
- Op aangeleverde documentatie (aangeleverd per email);
- Op deskinspecties uitgevoerd op 23 november en 22 december 2021 op het online kwaliteit management systeem Zenya.

Met vriendelijke groet,

5.1.2.e