

## Application Note

MagXtract® 3200, a fully automated nucleic acid extraction and PCR setup system using Vircell DIRECT SARS-COV-2 REALTIME PCR kit and extraction kit.

### A new level in lab automation



CE IVD FDA



#### Magnetic Bead

Fast and efficient automated nucleic acid purifications from various bio-specimens.



#### PCR Setup

Automatically and precisely dispense eluates, PCR reagents into PCR plate.



#### Open Platform

Comprehensive protocols creation and adaption for purification and PCR setup.



#### Whirl Mixing

Patented whirl-and-stir mixing approach to maximize the efficiency of purifications.



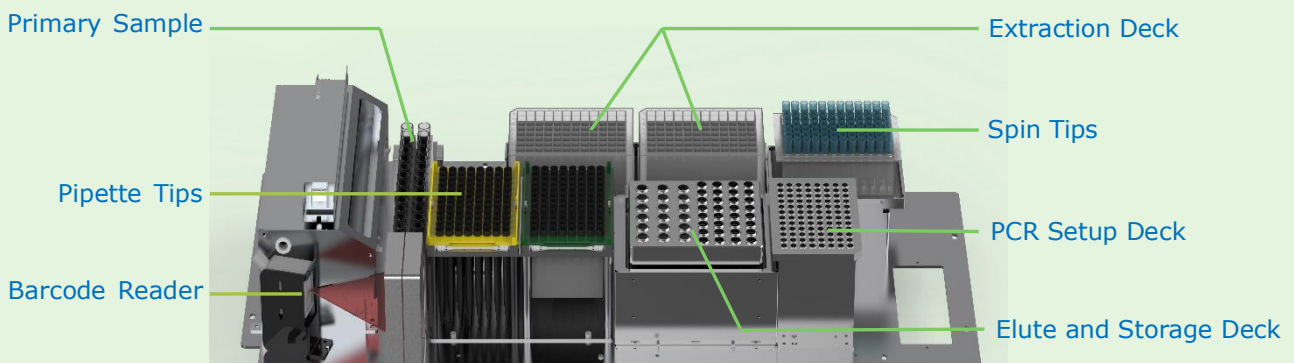
#### UV / HEPA

Safeguard against the contamination with UV light and HEPA.



#### Cool Station

Cooling control for eluates storage and reagent kits to maintain samples stability.



# DIRECT SARS-COV-2 REALTIME PCR KIT

Automated extraction of SARS-CoV-2 RNA from swab matrix and PCR preparation on the **MagXtract 3200**

## Introduction

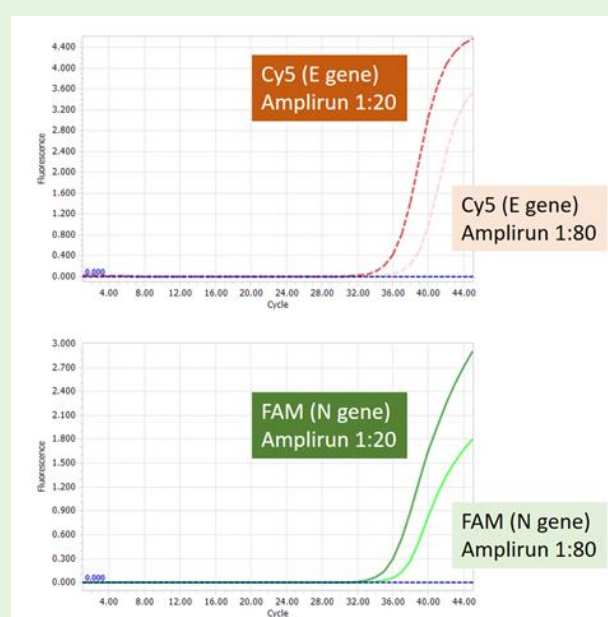
Owing to COVID-19 pandemic, the demands of nucleic acid purification elevate than before and the needs of laboratory automation increase dramatically. Vircell S.L. developed the DIRECT SARS-COV-2 REALTIME PCR kit allowing the automatically dispensed qPCR reagent. Chroma ATE provides high quality automated instrument, MagXtract 3200, for nucleic acid extraction and liquid handling. Through using DIRECT SARS-COV-2 REALTIME PCR kit combing with MagXtract 3200, laboratory scientists will conduct clinical examination in a safety, accuracy, and efficiency procedure.

## MagXtract 3200 Specification

<b>Description</b>	<b>Automated nucleic acid extraction and liquid handling system</b>
<b>Capacity</b>	Max. 32, 16-sample per run
<b>Weight</b>	70 kg (± 5kg)
<b>Dimensions</b>	721mm x 530mm x 567mm (W x D x H)

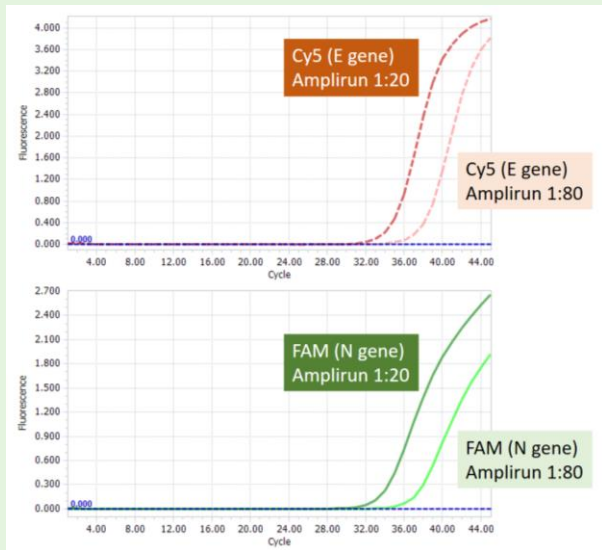
## Excellent Performance

We evaluated the performance of SARS-CoV-2 viral RNA detection from swab matrix sample using DIRECT SARS-COV-2 REALTIME PCR kit and MagXtract 3200. Highly sensitive target signal was shown as figure A and B. We also simulated the easily cross contaminated condition to confirm full run in MagXtract 3200 is reliable, figure C.

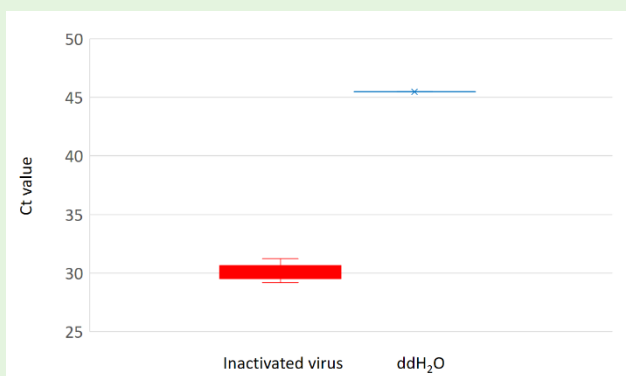


**Figure A. Highly sensitive detection of SARS-CoV-2 RNA in swab matrix (MN + Vircell + MagXtract 3200).** A serial dilution of inactivated SARS-CoV-2 virus (Amplirun® total SARS CoV-2 Control (Swab), Vircell microbiologists) was added into NucleoMag® Pathogen kit (MN, MACHERY-NAGEL) and followed the extraction procedure on the MagXtract 3200 instrument. Viral RNA was detected using qRT-PCR kit (DIRECT SARS-COV-2 REALTIME PCR kit, Vircell microbiologists) on the thermalcycler, LightCycler

96, Roche (Amplirun 1:20 = 1500 copies/ml,  
Amplirun 1:80 = 375 copies/ml)



**Figure B. Highly sensitive detection of SARS-CoV-2 RNA in swab matrix (TANBead + Vircell + MagXtract 3200).** A serial dilution of inactivated SARS-CoV-2 virus (Amplirun® total SARS CoV-2 Control (Swab), Vircell microbiologists) was added into M665A46 (TANBead) and followed the extraction procedure on the MagXtract 3200 instrument. Viral RNA was detected using qRT-PCR kit (DIRECT SARS-COV-2 REALTIME PCR kit, Vircell microbiologists) on the thermalcycler, LightCycler 96, Roche (Amplirun 1:20 = 1500 copies/ml, Amplirun 1:80 = 375 copies/ml)



**Figure C. Cross Contamination Test. No cross contaminated evidence in MagXtract 3200.**

Inactivated SARS-CoV-2 virus (Amplirun® total SARS CoV-2 Control (Swab), Vircell microbiologists) and ddH<sub>2</sub>O were added into M665A46 extraction kit (TANBead) for 15 repeats respectively. 5µl template are automatically transferred from extracted elution to PCR vials and analyzed by qPCR kit (DIRECT SARS-COV-2 REALTIME PCR kit, Vircell microbiologists) and thermalcycler (LightCycler 96, Roche)

### Open System and Automation Solution

MagXtract 3200 allows the authorized user to edit protocols including nucleic acid extraction and PCR preparation. High flexibility application can fit most magnetic based extraction kits and PCR reagent kits.

**Open System** – PCR premix dispensing volume, template dispensing volume, sample replicates, and control replicates can be revised by authorized user.

**Automation Solution** – Replace the manual steps including not only extraction but also PCR preparation.

1. Adding specimen to lysis buffer
2. Specimen lysis
3. Nucleic acid binding with beads

4. Collecting beads
5. Washing
6. Vaporizing (drying)
7. Eluting
8. Transferring eluate to storage vial
9. Dispensing qPCR premix to each vial
10. Adding template to each vial

It saves about 90% hands-on time!

### MagXtract 3200 GUI

Three operating modes: full run, preparation and extraction.

MagXtract 3200 software provides the protocol-based control to streamline the workflows. The stepwise GUI and touchscreen control guide the user through the complication of the assay setup, from sample loading to the consumable placement.

For more information please contact

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### Order Information

Product	REF
<b>DIRECT SARS-COV-2 REALTIME PCR KIT</b>	RTPCR002-LP
<b>MagXtract 3200 (CE-IVD)</b>	9-49200002
<b>Spin tip in box</b>	A94-000135
<b>Filtered tip (50µl)</b>	A94-000130
<b>Filtered tip (1000µl)</b>	A94-000131
<b>Customized accessories</b>	
<b>Sample drawer</b>	13 x 75 mm / 16 x 100 mm
<b>Elute and storage deck</b>	We can modify the number of hole to fit your application