Solutions for the Detection of SARS-CoV-2 Coronavirus in Environmental, Air and Water Samples

Reliable detection and monitoring of SARS-CoV-2 in the environment as part of robust surveillance is critical to curb the spread of COVID19 and enable public health authorities to manage and implement control measures.

If you need to collect viruses, such us the coronavirus SARS-CoV-2 from air samples, seek methods to concentrate viruses from wastewater samples, or streamline your sample handling, Sartorius offers track-proven, reliable solutions to help you get the job done.

Simplifying Progress

Detection and Monitoring of SARS-CoV-2 in the Air

Discover Air Sampling Tools for Detection of SARS-CoV-2 in Your Air Indoors

Airport MD8 air sampler

Gelatine membrane filter

With the help of the portable Airport MD8 air sampler, the air of all high-contamination risk areas can be sampled to detect the presence of the coronavirus.

Gelatine membrane filters are unique in being a water soluble filter, which was purpose-built for quick and reliable sampling followed by easy storage and sample preparation of viruses and other pathogens.

The unique water-soluble gelatine membrane filters are the perfect way to easily monitor SARS-CoV-2 levels and other airborne pathogens in the surrounding air.

Our gelatine membranes provide the highest retention rates for bacteria, viruses, spores, and phages and maintains the viability of the sampled microorganisms and viruses.

Easy Steps from Collection to PCR Detection of Virus

Preparation for sampling

Active on-site air sampling

Membrane transfer

Membrane dissolving

Extraction and PCR amplification

The unique Sartorius gelatine air filters combined with patented membrane-dissolving technology enable you to detect every single virus that was retained on your membrane.

After sampling, the membrane filter can be dissolved in minimal volumes of water or buffer for RNA extraction and subsequent analysis by PCR, or in media for virus infectivity assays.

See how experts have used Sartorius air samplers and Gelatine Membrane Filters in different virus detection areas:

Detection of SARS-CoV-2 in Wastewater

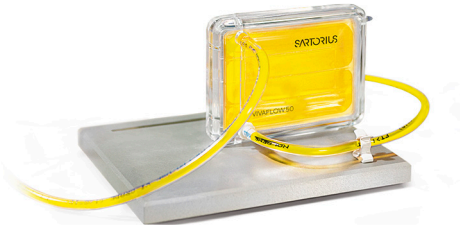
Efficient Preparation of Wastewater Samples Prior to SARS-CoV-2 Detection

Concentration of Viruses and VLPs by Ultrafiltration
Ultrafiltration products are ideal for isolation and concentration of virus particles and their genetic material from drinking, waste, and surface water samples. Vivaspin®, Vivacell® and Vivaflow® ultrafiltration devices are used prior to the extraction and detection of SARS-CoV-2 genomic RNA by real-time PCR.

The product range includes several membrane materials and molecular weight cut-offs (MWCO) to cover a wide variety of applications.

Vivaspin® centrifugal ultrafilters for 100 µL to 20 mL samples

Vivacell® centrifugal or pressure-driven devices for 20 mL to 100 mL samples

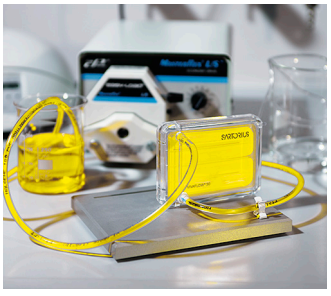


Vivaflow® tangential flow cassettes for samples from 50 mL to several liters

Preparation of Wastewater Samples Prior to PCR Detection

Sample collection

Particle removal



Concentration

Extraction and PCR amplification

Sartorius supports your wastewater sample preparation workflow with streamlined solutions for particle removal and concentration of SARS-CoV-2 particles and genomic RNA..

See how Vivaspin® 50kDa MWCO ultrafilters were used for concentration of SARS-CoV-2 virus from wastewater sample prior to RT-qPCR detection:

Supporting Products and Accessories

Particle Removal With Filtration

Sartolab® RF | BT vacuum filtration units are single-use units designed for the filtration of sample volumes of up to 1 L. The filtration unit may be used as a standalone system or with the Sartolab® Multistation, which allows parallel filtration of up to 6 samples.

A wide range of membrane filters for aqueous solutions with high flow rates. Available for particle retention in multiple diameters and pore sizes.

Sartolab® P20 Pressure Filtration Devices with PES membrane are convenient filtration units for 100 mL to 5 L sample volumes that have heavy particle loads.

Nuclease-Free Ultrapure Water

Nuclease-free water can be utilized in several steps of the RNA concentration, extraction and detection workflow: for resuspension of solid phase of wastewater samples after centrifugation and elution after binding on membranes followed by PCR detection. Sartorius' Arium® Ultrapure Water Systems, equipped with an integrated or external ultrafilter, guarantee an on-demand supply of nuclease-free water, when and where it's needed.

Pipetting and Sample Transfer

In detecting SARS-CoV-2, RNA preparation and RT-PCR are pipetting intensive protocols for which precise, accurate and contamination free pipetting is required.

Ergonomically designed Sartorius mechanical Tacta®, and electronic Picus® and Picus® Nxt pipettes are easy to clean and resistant, making regular decontamination simple during coronavirus testing.

RNase | DNase free pre-sterilized Safetyspace Filter tips help protect samples from contamination.

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