
Viral Concentration Kit for Biofluids

Cat #: SC10



Storing the viral concentration kit should be stored at 4-8°C.

Disclaimer

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Evomic Science LLC disclaims any and all responsibility for any injury or damage which may be caused by the failure of the buyer or any other person to use these products in accordance with the conditions outlined herein or in accordance with NIH guidelines for Biosafety Level 2 or up infectious agents and recombinant DNA material.



Introduction

This viral concentration kit is a universal solution suitable for concentrating various viral particles (e.g., EBV, Adenovirus, rAAV, HAV, HBV, HCV, Dengue virus, SARS, Influenza, Retrovirus, Lentivirus, Rotavirus, etc.) and virus-like particles (VLPs) from biofluids, cell culture media, and environmental samples such as wastewater.

Regarding respiratory viruses, such as SARS-CoV-2, collecting a good specimen by shoving a cotton swab deep into the nasal cavity can be technically challenging and is not a patient-friendly method. The variance in nasal swab specimens is a major contributor to pseudo-negative results in current SARS-CoV-2 RNA detection.

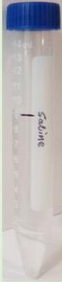
Increasing evidence indicates that there is a comparable number of viral particles in saliva as in nasal cavities. Sampling saliva is less invasive, less variable, easier to collect in large volumes, and safer for health professionals compared to nasal swab sampling.


Furthermore, the current protocol for RNA and viral antigen detection methods fails to process large volumes of saliva samples (< 1 ml). Therefore, we have developed a viral concentration kit for saliva, in which all respiratory viruses are maximally collected by deeply coughing and then rinsing the whole mouth. This method efficiently concentrates viral particles up to 100-fold at any sample volume. The concentrated viral particles are suitable for both RNA and antigen detection with increased sensitivity, as well as other in vitro and in vivo applications. This kit is particularly suitable for viral detection in pooled saliva and other biofluids.


A brief procedure is outlined below




- 1.** Deep **Cough** 3 times and Rinse mouth with 9 ml of saline for 60 seconds.


- 2.** Directly **Spit** saliva into viral concentration tube and Mix well.


- 3.** Recap the vial tightly and **Centrifuge** at 2,000g for 15 min.


- 4.** Suck Supernatants and **Suspend** pellet in lysis buffers.



Product Features:

- Fast (20 min), Efficient (>95% Yield), Easy (2,000g) to operate.
- Up to 100-fold concentrated,
- Suitable for all almost natural and recombinant virus particles.
- Suitable for biofluids, cell culture media, environmental samples, such as wastewater.

Kit Components Additional Materials/Equipment

- **Ten** pre-prepared viral concentration tubes.
- Customers need: **Ten** empty saline tubes and Benchtop centrifuge.

Warning

This kit permits quick concentration of viral particles including all respiratory viruses e.g. SARS-CoV-2 and Influenza etc. The sample processing should be handled at least BSL3 safety level. Special precautions should be followed as your institute IRB and government guidelines. Wear hand, eye, face, and body personal protective equipment (PPE) when processing samples collected with this kit. Evomic Science LLC takes no responsibility for improper use of this kit.

For research use only. Not for use in diagnostic or human clinical procedures.



Protocol for Virus Particle Concentration from Saliva:

1. Before saliva collection, do not eat, drink, smoke, or use oral hygiene products for at least 30 minutes.
2. Deep cough at least three times with a half-closed mouth.
3. Rinse the whole mouth vigorously with 9 ml of drink water, saline, or PBS buffer for one minute.
4. Directly spit saliva into the pre-prepared viral concentration tubes.
5. Invert the above tubes at least times to mix well (Do not Vortex).
6. Option: store the sample in the refrigerator or mail it to labs.
7. Centrifuge the sample mix at 2,000×g for 15 minutes at 4°C or room temperature.
8. Carefully suck supernatants without disrupting the pellet, which contains viruses.
Note: *Be sure to remove all the supernatant. Spin down and aspirate again if necessary.*
9. Suspend the concentrated virus in PBS (e.g. 150 µl) or your desired buffer.
10. The concentrated viral particles can be used for
 - *In vivo* or *in vitro* viral infection (e.g. 70 µl).
 - Antigen testing directly (e.g. 70 µl).
 - RNA extract or direct RNA detection (e.g. 70 µl).**Note** 1. Do not use classical TRIZOL reagent for RNA extract.
2. Elute RNA with hot water (95°C) if using a column-based RNA extract kit.
11. We recommend using the fresh isolated virus particle immediately. Otherwise, freeze sample at -80°C for longer periods.
Note: Repeated thaw and freeze cycles can damage virus structure.

Protocol for Virus Particle Concentration from Other Biofluids:

1. Collect 10 ml samples, e.g. cell culture media, wastewater.
2. Add 10 ml of samples to the pre-prepared viral concentration tubes.
3. Follow the above step 5.

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