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# EasySC Viral DNA/RNA Purification Kit

## Catalog Number: D127-1, D127-2

**Table 1. Kit Components and Storage**

| Kit Component | D127-1 (50 preps) | D127-2 (200 preps) | Storage | Stability |
|---|---|---|---|---|
| **Buffer AL** | 15 mL | 60 mL | RT | The product is stable for one year when stored as directed. |
| **Buffer AW1*** | 15 mL | 53 mL | RT | |
| **Buffer AW2*** | 15 mL | 2×25 mL | RT | |
| **RNase-Free dd$H_2O$** | 10 mL | 30 mL | RT | |
| **Proteinase K (20 mg/mL)** | 1.1 mL | 4.4 mL | -20°C | |
| **Carrier RNA (1 μg/μL)** | 100 μL | 400 μL | -20°C | |
| **Mini Column** | 50 | 200 | RT | |
| **2 mL Collection Tube** | 50 | 200 | RT | |

***** Prior to use, add absolute ethanol to **Buffer AW1** and **Buffer AW2** according to the bottle label.

## Product Description

EasySC Viral DNA/RNA Purification Kit is designed for the isolation of viral DNA/RNA from serum, plasma, blood, urine, cell culture media, saliva, homogenized tissue sample suspension, fecal, and swab samples. The kit also features a buffer system that facilitates complete viral particle lysis for efficient nucleic acid isolation. Viral DNA/RNA is bound to spin column, washed and eluted. The isolated high-quality DNA/RNA is ready for downstream applications such as Next-Gen sequencing, hybridization-based and RT/qPCR detection.

## Features

- ❖ High sensitivity: the kit can be used to isolate viral DNA/RNA as little as 10 copies of virus.
- ❖ Fast: the purification process takes only 30 minutes.
- ❖ Good stability: the optimized buffer system provides consistent results.
- ❖ Universal: the kit is compatible with various liquid samples.

## Sample Preparation

A. Swab samples

Incubate the swabs in PBS, sodium chloride, or RNA protecting reagent for 30 min with agitation. Then remove the swab pressing it against the walls of the tube to squeeze out most of the liquid.

B. Feces

Mix 1 volume of feces (e.g., 500 μL) with an equal volume of PBS buffer. Mix vigorously by vortexing for 1 min. Allow the particles to settle down or centrifuge with low speed (e.g., at 500 x *g*). Proceed with the cleared supernatant.

C. Tissue samples

Homogenize tissue samples. Typically 5-10 mg sample material can be homogenized in 400 µL PBS buffer or a buffer containing chaotropic salt using a bead based homogenizer. Centrifuge the homogenized sample and use up to 250 µL clear supernatant for further processing.

D. Blood sample

A sample volume of 100-200 µL blood is recommended. Do not use higher volumes. When processing less than 200 µL sample adjust with PBS buffer to a final volume of 200 µL.

## Purification Protocol

1. Add 20 µL of Proteinase K to a 1.5 mL centrifuge tube.
2. Add 250 µL of sample to the centrifuge tube. If the volume of the sample is less than 250 µL, make up the difference with TE buffer. Mix the sample by flicking the tube or pipetting the sample up and down, then centrifuge the liquid to the bottom of the tube.
3. Add 2 µL Carrier RNA (*optional*) and 250 µL Buffer AL to the sample. Vortex to mix well, and incubate at 50-55$^{o}$C for 15 min.

   **Note**: Buffer AL and Carrier RNA can be premixed, and it's stable for 2 days at 2-8$^{o}$C.
4. Add 250 µL absolute ethanol to the sample, and vortex for 30 second. Incubate at RT for 3 min, then centrifuge the liquid to the bottom of the tube.
5. Insert a DNA Mini Column into a 2 mL Collection Tube. Transfer the samples from step 4 to the DNA Mini Column, then centrifuge at 10,000 x g for 1 min.
6. Discard the filtrate and reuse the collection tube. Add 600 µL of Buffer AW1 to the DNA Mini Column, invert and mix once, then centrifuge at 8,000 x g for 1 min.

   **Note**: Buffer AW1 must be diluted with absolute ethanol according to the bottle label before use.
7. Discard the filtrate and reuse the collection tube. Add 600 µL of Buffer AW2 to the DNA Mini Column, then centrifuge at 8,000 x g for 1 min.

   **Note**: Buffer AW2 must be diluted with absolute ethanol according to the bottle label before use.
8. Discard the filtrate and reuse the collection tube. Add 600 µL of Buffer AW2 to the DNA Mini Column, then centrifuge at 8,000 x g for 1 min.
9. Discard the filtrate and reuse the collection tube. Centrifuge the empty DNA Mini Column at 12,000 x g for 3 min.

   **Note**: This step is critical for removing of trace ethanol that may interfere with downstream applications.
10. Transfer the DNA Mini Column into a new nuclease-free 1.5 mL microcentrifuge tube, add 20-50 µL RNase-Free dd$H_2O$ preheated to 70ºC. Let sit at RT for 3 min, then centrifuge at 10,000 x g for 1 min.

    **Note**: To improve the yield, repeat this step for a second elution step.
11. Discard the column and store the DNA/RNA at -20-80ºC.