# VirusMag™ One-Step DNA/RNA Isolation Kit

# User's Instruction

## Description

VirusMag™ One-Step DNA/RNA Isolation Kit is a research use only (RUO) kit, which is designed for the isolation of viral RNA/DNA or bacterial DNA from cell-free body fluids such as serum, plasma, blood, homogenized tissue sample suspensions, stool sample suspensions, and swab by using magnetic beads and unique buffer system. The nucleic acid in the samples is first released by Lysis Buffer RLQP and then specifically bound on magnetic beads. The magnetic beads combined with the nucleic acid are captured by magnetic materials. Then the nucleic acid is eluted from the magnetic beads by Elution Buffer (EB).

## Kit Contents

| | 100 preps |
|---|---|
| 1. Lysis Buffer RLQP (with Magnetic Beads) | 50 ml |
| 2. Elution Buffer (EB) | 15 ml |

**Notes:**

- This kit can be used for both manual and automated isolation. Here we provide the protocol for manual isolation. For automated isolation, please follow the instruction of your instrument.

## Protocol

**Manual Protocol**

1. Sample processing methods from different sources:

   a) For viruses in whole blood, plasma, serum, ascites and other liquid samples: add 450 µl Lysis Buffer RLQP into 1.5 ml DNase/RNase-free centrifuge tube, and then add 200 µl sample. Mix them thoroughly.

   b) For viruses in animal and plant tissues: add appropriate amount of saline or PBS to the samples, and then grind them thoroughly. Centrifuge at 12,000 g for 5-10 min. Add 200 µl supernatant into 1.5 ml DNase/RNase-free centrifuge tube, and then add 450 µl Lysis Buffer RLQP. Mix them thoroughly.

   c) Note: this kit is not suitable for VTMs with corrosive reagents like guanidine salt.

To extract nucleic acids from those VTMs, we recommend VirusMag™ DNA/RNA Isolation Kit, which includes wash steps.

2. Keep the mixture at room temperature for 10 min.

3. Place the centrifuge tube on the magnetic separator. Wait at least 3 min until all beads have been attracted to the magnet. Remove the liquid in the tube with a pipette.

4. Remove the centrifuge tube from the magnetic separator. Add 50 µl EB. Resuspend the magnetic beads and keep at room temperature for 10 min.

5. Place the centrifuge tube on the magnetic separator for 3 min. Transfer the liquid to a new 1.5 ml DNase/RNase-free centrifuge tube.

   a) Note: If liquid is found on the tube wall or cap during operation, please centrifuge the tube briefly so that the liquid can get back to the bottom of the tube.

**Automated Protocol (Take Thermo KingFisher 96 as an example)**

1. According to the following table, add reagents and start KingFisher 96.

   a) Note: A=KingFisher 96 DW Plate B=KingFisher 96 KF Plate

2. After the reaction, please take out the plate, store it in low temperature, and examine purity and concentration.

   a) Note: Elute twice can get higher concentration.

| Plate Type | Plate | Content | Reagent Volume |
|---|---|---|---|
| A | 1 | Sample + Lysis Buffer RLQP (with Magnetic Beads) | 400-1000µl |
| B | 2 | Elution Buffer (EB) | 50-100µl |
| A | 3 | Tip Loading Plate | -- |

## Storage

Room temperature for 18 months.