ab288104 – Lentivirus and Retrovirus Purification Kit

A kit for the capture, concentration and storage of lentiviruses and retroviruses using magnetic beads.
For research use only - not intended for diagnostic use.

For overview, typical data and additional information please visit:
https://www.abcam.com/ab288104

Storage and Stability

The kit and contents can be stored at 4°C. All reagents are stable for up to 12 months when stored properly at 4°C.

Materials Supplied

Item	Quantity	Storage Condition
LV/RV-magnetic beads	0.2 ml	4°C
Conservation Buffer (5X)	0.2 ml	4°C
Elution Buffer (1X)	5 ml	4°C

Materials Required, Not Supplied

These materials are not included in the kit, but will be required to successfully utilize this assay:

- 1.5 ml microcentrifuge tubes, 15 ml & 50 ml centrifuge tubes
- Magnetic separation rack
- PBS

Reagent Preparation

1. Dilute 1 volume of the Conservation Buffer (5x) in 4 volumes of PBS (1X final) freshly when required.
2. Do not freeze the LV/RV-magnetic beads

Assay Protocol

Virus Purification Protocol:

1. Add 20 µl of LV/RV-magnetic beads to ≤2 ml virus preparation. 20 µL of magnetic beads are sufficient to bind 1 x 106 infectious viruses with almost 80-99% efficiency. If the virus preparation is >2 mL add 10 µl/ml of magnetic beads.

   Δ Note: *It may be necessary to adjust the volume of magnetic beads depending on the composition of the virus solution or medium. The suggested range is 10 µl - 40 µl and 5 µl - 20 µl/ml of magnetic beads for ≤ 2 ml or > 2 mL viral preparation respectively. For high titer viral solution (≥ 107 infectious viruses/ml), we recommend using 1.5 or 2 times of the suggested volume.*

2. Incubate for 20-30 min at RT to capture viruses.

3. Place the tube for 15 - 30 min on the magnetic separation rack to concentrate the virus/magnetic beads complexes. The incubation time will depend on the tube volume. For tube volumes of 1 ml, 10 ml, 50 ml, incubate the complexes on the magnetic rack for 15 min, 20 min and 30 min respectively. Then discard the supernatant.

   Δ Note: *Brown pellet will be visible on the side of the tube near the magnets.*

4. Optional Washing Step: Keep the tube on the magnetic separation rack and slowly add an equal volume of PBS as the initial medium and incubate for 5 min. Discard the supernatant.

5. The virus/magnetic beads complexes pellet can be processed in 4 different ways as described below:

   a) Add small volume of PBS (with Ca^{2+} and Mg^{2+}) or complete cell culture medium to virus/Magnetic beads complexes and use immediately for downstream applications. Determine the appropriate volume of PBS/medium to add as needed.
   b) Add small volume of Conservation Buffer for long term storage of virus/magnetic beads complexes.
   c) Elute viruses from magnetic beads, concentrate in small volumes of Elution Buffer and use immediately.
   d) Elute viruses from magnetic beads, concentrate into smaller volume of Elution Buffer and additionally add Conservation Buffer for long term storage.

6. Elution: Elution step is optional:

   a) Add an appropriate volume of Elution Buffer to the virus/magnetic beads complexes pellet for the required concentration. For e.g., if the initial virus solution is 1 ml and you want to concentrate10X fold, then add 100 µl of Elution Buffer. (See table 1 below).
   b) After adding Elution Buffer, incubate for 5 to 10 min at RT.
   c) Place the tube on the magnetic separation rack and incubate 10 to 30 min at RT. Adjust incubation time on the magnetic separation rack according to the volume. For tube volumes of 1 ml, 10 ml, 50 ml incubate the complexes on the magnetic rack for 15 min, 20 min and 30 min respectively.
   d) Save the supernatant containing viruses and discard the pellet of magnetic beads.
   e) The concentrated virus solution can be used for downstream assay or proceed to storage in step 7. The Elution Buffer does not impair viral infectious properties.

7. Storage: The Conservation Buffer allows storage of virus for several months at -80°C and preservation of the virus titer during freeze/thaw cycles. Dilute 1 volume of the Conservation Buffer (5x) in 4 volumes of PBS (1X final) freshly when required. For example, to prepare 100 µl conservation buffer, add 20 µl of conservation buffer to 80 µL of PBS. Add freshly prepared Conservation buffer to the virus/magnetic beads complexes pellet. To concentrate the virus solution, use small volume of Conservation buffer. Store the complexes at -80°C.

   Δ Note: *To reduce freezing/thawing cycles, it is recommended to aliquot virus for long term storage.*

8. Storage after elution:
   - Conservation Buffer can be added right after the elution step.

   a) Add the Elution Buffer to the virus/magnetic beads complexes pellet. To determine the appropriate volume of Elution Buffer to add see table 2 below. After adding Elution Buffer, incubate for 5 to 10 min at RT. Place the tube on the magnetic separation rack and incubate 10 to 30 min at RT. Adjust incubation time on the magnetic separation rack according to the volume. For tube volumes of 1 ml, 10 ml, 50 ml incubate the complexes on the magnetic rack for 15 min, 20 min and 30 min respectively.
   b) After Elution with the elution buffer, save the supernatant containing viruses and discard the pellet of magnetic beads.

c) Add the Conservation Buffer (5x) directly to the eluted virus solution to obtain a 1X final concentration. For different fold concentrations please see table 2 below.
d) Store virus at -80°C.

Table 1. Volume of Elution Buffer for concentration and immediate use

Starting Viral Solution	Required Concentration			Exchange Medium
	10X	50X	100X	
1 ml	100 µl	20 µl	10 µl	1 ml
5 ml	500 µl	100 µl	50 µl	5 ml
10 ml	1 ml	200 µl	100 µl	10 ml
50 ml	5 ml	1 ml	500 µl	50 ml

Table 2. Volume of Elution Buffer (EB) and Conservation Buffer (CB) for concentration and storage:

Starting Viral Solution	Expected concentration 10X		Expected concentration 50X		Expected concentration 100X		Exchange Medium	
	EB	CB	EB	CB	EB	CB	EB	CB
1 ml	80 µl	20 µl	16 µl	4 µl	8 µl	2 µl	800 µl	200 µl
5 ml	400 µl	100 µl	80 µl	20 µl	40 µl	10 µl	4 ml	1 ml
10 ml	800 µl	200 µl	160 µl	40 µl	80 µl	20 µl	8 ml	2 ml
50 ml	4 ml	1 ml	800 µl	200 µl	400 µl	100 µl	40 ml	10 ml

Technical Support

For all technical or commercial enquiries please go to:
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