MINI SEC COLUMN · QUICK GUIDE

Apex mini MM · 4B · 6B

Size Exclusion Chromatography · Revision 2, July 2026

everest biolabs

The Apex mini size exclusion chromatography (SEC) column purifies small volumes of extracellular vesicles (EVs) from biological fluids such as plasma, serum, urine, cell culture media, or cerebrospinal fluid (CSF). Apex mini MM combines SEC with a multi-mode resin that uses hydrophobic interaction and ion-exchange to selectively bind and remove lipoproteins and other soluble contaminants to enhance EV purity.

▲ Column specification

PARAMETER	DESCRIPTION	VALUE
Sample volume	Volume of sample added into the column	**0.1–0.3 mL**
Fraction volume	Volume of eluent collected in a single fraction	**0.15 mL**
Discard volume *	Buffer added after sample before particles (e.g. EVs) start eluting	**0.85 mL †**
Void volume	The mobile phase volume of the column	**1.0 mL**
Column resin bed volume	Volume occupied by the SEC resin	**3.3 mL**
Wash volume	Volume of buffer added into column before sample	**7 mL**

* Discard volume = Void volume – Sample volume † A 0.85 mL discard volume assumes a 0.15 mL sample volume.

▲ Materials needed

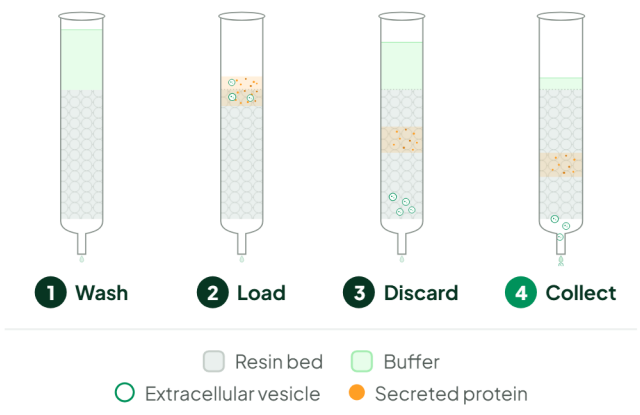
- Elution buffer (e.g. PBS)
- Ascent or Summit instrument, or column holder
- 2.0 mL or 1.5 mL tubes (e.g. Eppendorf Protein LoBind)

▲ Warnings & precautions

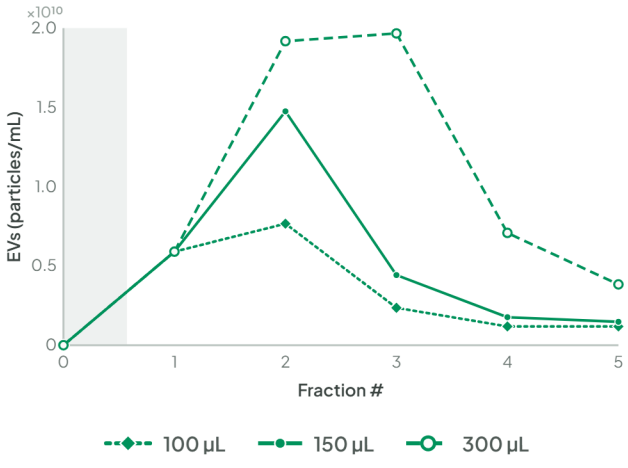
The column storage buffer contains **Sodium Azide** or **Proclin™ 200**. Avoid ingestion and contact with eyes, skin, and mucous membranes.

▲ EV elution

Elution process



Elution profile



EVs elute immediately after the discard volume; collect fractions 1–3. The profile shows EV concentration (Atlas EV ELISA kit) across plasma sample inputs of **100, 150, and 300 µL**; the shaded band marks the sample + discard volume (1 mL total void volume).

▲ Sample & buffer preparation

- Centrifuge samples at 2,500 g for 10 minutes to remove cell debris or aggregates.
- Filter all buffers with a 0.22 µm filter and degas before use.
- Bring column and elution buffer to room temperature.

▲ Manual procedure

Note: columns must be at room temperature.

For the best results, use the **Ascent** or **Summit** instrument for washing and fraction collection.

1. Remove the top cap of the column.
2. Place the column on a column stand.
3. Remove the bottom cap.
4. Wash the column with 7 mL of elution buffer (e.g. PBS); wait for dripping to stop.
5. Gently add 0.1–0.3 mL sample to the column; wait for dripping to stop.
6. Add the Discard volume of elution buffer (0.85 mL for a 0.15 mL sample; 0.7–0.9 mL for other inputs); wait for dripping to stop.
   Sample volume + Discard volume = Void volume of 1.0 mL.
7. Add Fraction volumes (0.15 mL elution buffer) and collect each in a separate tube; wait for dripping to stop.
8. EVs typically elute in fractions **1, 2, and 3** (fraction 1 starts after the Discard volume).
   Pool fractions 1–3 (0.15 mL each, 0.45 mL total) to isolate EVs.