TECHNICAL NOTE

# Comparison between SEC35 and SEC70 columns for extracellular vesicle isolation

## Introduction

Size exclusion chromatography (SEC) is a widely used technique for the separation of extracellular vesicles (EVs), including exosomes and microvesicles, from biological fluids or culture media. At Immunostep, we offer two types of SEC columns: **SEC35** and **SEC70**, adapted to different experimental needs depending on particle size, desired purity, and sample type.

## Main differences between SEC35 and SEC70

| Feature | SEC35 | SEC70 |
|---|---|---|
| **Resin pore size** | Small | Large |
| **Separation range** | ~35–350 nm | ~70–1000 nm |
| **Target particles** | Exosomes, small EVs | Microvesicles, medium and large EVs |
| **EV recovery** | High | Moderate |
| **Purity (free of proteins/lipoproteins)** | Moderate | High |
| **Protein co-elution** | May contain some albumin or HDL | Lower presence of contaminants |
| **Ideal applications** | Cases where recovery and purity are equally important | When purity is a priority (e.g. proteomic or functional analysis) |

## Recommendations for use

- **SEC35**: Ideal for researchers working with exosomes or small EVs who need **maximum particle recovery**, even if purity is slightly lower.
  Common applications: RNA studies, NTA, subsequent immunocapture.
- **SEC70**: Recommended when **purity is key**, especially in samples with high protein load (such as plasma). Effective for separating EVs from lipoproteins and albumin. Common applications: proteomic analysis, functional studies, diagnostic use.

## Additional considerations

- Both columns are compatible with samples such as **plasma, serum, urine, and culture media**.
- It is recommended to use fractions between **F7 and F12** to obtain EVs with greater integrity and less contamination.

## Format and compatibility

- The columns are available in a ready-to-use format.
- They can be combined with immunocapture kits (such as ExoStep™) for subsequent phenotypic characterisation by **flow cytometry**, **ELISA,** or **surface labelling**.

## Conclusion

The choice between SEC35 and SEC70 will depend on the desired balance between **recovery and purity**, as well as the size of the EVs to be analysed. For personalised assistance, the Immunostep technical team is available to help you select the best option for your specific application.