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.

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Immunostep S.L. – Specialists in the detection and characterisation of extracellular vesicles