

EV-Spinner

Ultrafiltration concentrator 100 kDa

Product Code: HBM-EVS-100-24, HBM-EVS-100-48

About EV-Spinner

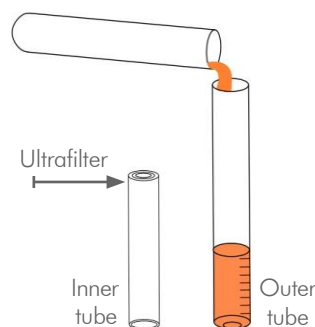
EV-Spinner is a 2.5 ml non-stick ultrafiltration (UF) concentrator especially designed to enhance the recovery of extracellular vesicle (EVs) during the concentration or buffer exchange step. The ultrafiltration works in the opposite direction to the centrifugal force, providing higher particle recovery. The low protein binding membrane reduces the EV loss, compared to V-shape concentrators, and the reverse design of the EV-spinner ensures that the filter does not clog.

Specification

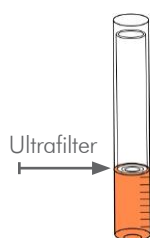
Membrane type	Polyethersulphone, 100 kDa MWCO
Plastic construction	Polystyrene
Maximum sample volume	2.5 ml
Hold-up volume	0.050 ml
Centrifugation speed	2500 g Swing bucket rotor 2000 g Fixed angle rotor
Other tube dimensions	17 x 1000 mm
Storage	Store at Room Temperature
Shelf-life	24 months

Extracellular Vesicles and Nanoparticles Concentration

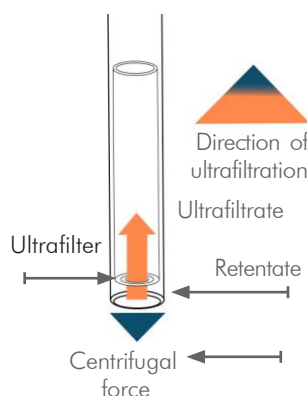
1. Remove the cap and slide the inner floating tube out. Rest the inner tube on a table with the membrane side uppermost to protect the membrane. Pipette the sample (0.1-2.5 ml) into the centrifuge tube (Outer tube).



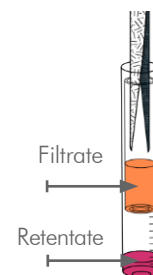
2. Re-insert the inner tube with the membrane side first. Ensure the membrane is in contact with the sample. Do not re-insert the cap for centrifugation.



3. Centrifuge in a bench centrifuge in a rotor with cavities accepting 17 x 100 mm tubes (cavities for 15 ml Falcon tubes). Set the centrifuge speed according to the specification table. Concentration of 2.5 ml EV solution to 0.25 ml takes roughly 15 minutes.



4. After centrifugation, remove the inner tube with the tweezers supplied. Recover the concentrated sample (retentate) in the outer tube with a micropipette.



Filter Storage After Use

After use, the filter can be stored at RT or in fridge (4-8°C). Fill the inner and the outer tube with MilliQ water, in order to keep the filter membrane wet. Close the filter with the cap. The filter is suitable for further uses.

Concentration performance

FIG 1. Up to 98% of EV recovery was observed with 2.5 ml of EV solution concentrated up to 0.25 ml. Symbols are biological repeats, bars indicate means and error-bars are SDs.

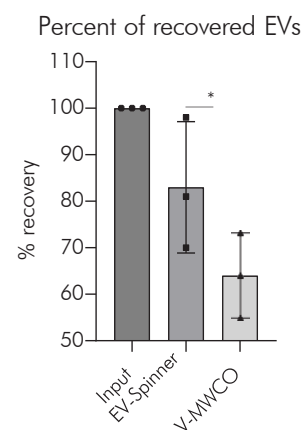
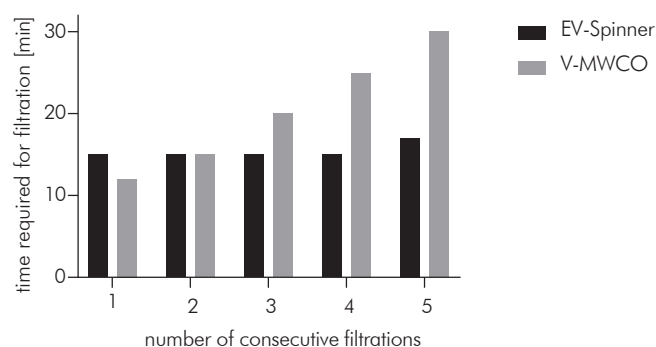


FIG 2. EV-Spinner allowed consecutive concentrations (from 2.5 ml up to 0.25 ml) with minimum clogging of the filter. The clogging of the filter was measured by the time necessary for concentrating a solution of EVs from 2.5 ml up to 0.25 ml.

Time required for consecutive filtrations



References

- Li, C., Enciso-Martinez, A., Koning, R. I., Shahsavari, M., & Dijke, P. T. (2024). TGF- β regulates the release of breast cancer cell-derived extracellular vesicles and the sorting of their protein cargo by downregulating RAB27B expression. *Journal of Extracellular Vesicles*, 13(12). <https://doi.org/10.1002/jev.2.70026>
- Dekkers, M. C., Lambooi, J. M., Pu, X., Fagundes, R. R., Enciso-Martinez, A., Kats, K., Giepmans, B. N. G., Guigas, B., & Zaldumbide, A. (2024). Extracellular vesicles derived from stressed beta cells mediate monocyte activation and contribute to islet inflammation. *Frontiers in Immunology*, 15. <https://doi.org/10.3389/fimmu.2024.1393248>



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