TFF-Easy: Tangential flow filter for EV concentration

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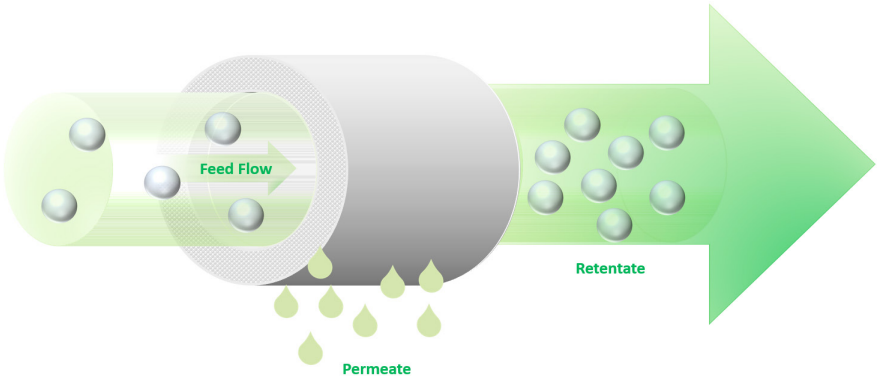
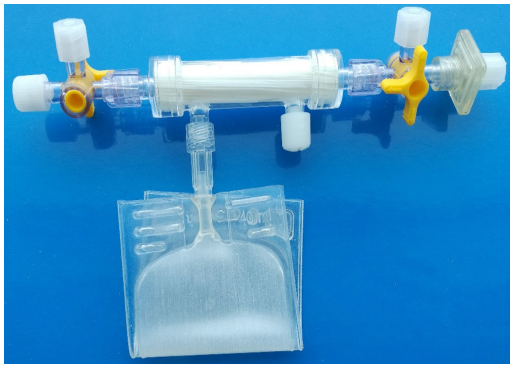
Easy concentration of diluted fluids for EV isolation

Tangential flow filtration (TFF) is a rapid and efficient method, usually used for separation and purification of biomolecules. TFF can be also used to concentrate and desalt sample solutions, and is emerging as a new technique for EV isolation,if coupled with SEC.





Our TFF-Easy is a filter cartridge in hollow fibers made of polysulfone, which allows the concentration and the removal of small proteins and molecules from diluted matrices (cell conditioned media, urine, etc..), prior to the EV purification.

The small dimensions of the device allow to concentrate samples from 5 ml up to bigger volumes, surmounting the limit of the TFF technique which is usable for processing big volumes of fluids.

Applications

- Concentration of diluted matrices as cell media or urine prior to EV isolation.
- Easy removal of small molecules and ions from the EV preparation.
- EV dialysis for changing buffer conditions.
- High efficiency of EV isolation if coupled with SEC columns.

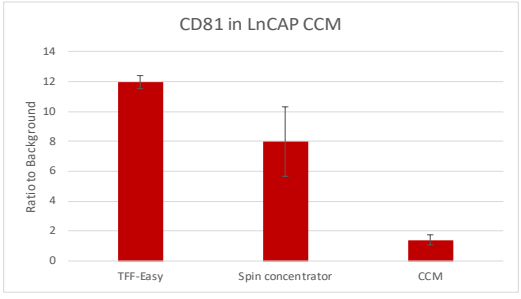
Advantages

- Washable.
- Reusable multiple times.
- Easy to use.
- Fast concentration of EV containing matrices.

Characteristic

- Hollow fiber cut-off 20 nm

Concentration of Cell Conditioned Media and desalting of EV preparations.



CD81 expression in concentrated CCM vs not concentrated (CCM).

Buffer exchanging phases	Conductivity (µS/cm)	Particle concentration (particle/ml)
EVs in buffer 1 (PBS1x)	15000	$4.3x10^{11}$
1- Buffer 1 (PBS1x) removal by TFF	15000	
2- EV dilution in buffer 2 (water)	240	
3- Buffer 1 (PBS1x) residue removal	55	
4- EV dilution in buffer 2 (water)	22	
EV in buffer 2 (water*)	12	$3.58x10^{11}$
* EVs are not stable in deionized water. Water (buffer 2) was chosen just to show the difference of conductivity between buffer 1 and buffer 2, and the complete removal of buffer1		

Process for changing EV buffer with TFF-Easy.

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