EXOSOME RESEARCH

SmartSEC-DeLipo™ Advanced sEV Isolation Kit

New! 2024

PURER EVS WITH LESS LIPOPROTEINS

SYSTEMBIO.COM/SMARTSEC-DELIPO

HIGHLIGHTS

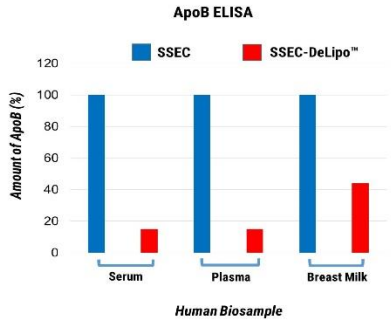
- New Generation of Mixed-Mode Chromatography - Dual functionality of size exclusion and affinity interaction modes.
- Advanced Lipoprotein Depletion - Selectively removes lipoproteins from the sample.
- Fast and Easy Isolation of High Yield and Purity sEV - User friendly workflow to achieve consistently high yields of pure sEVs, free from lipoprotein contaminants.
- Superior Performance - Highly reliable and reproducible.
- Versatile Compatibility - Applicable to plasma, serum, breast milk, etc.
- Various Applications - Ideal for biomarker discovery, disease diagnostics, therapeutic development, and intercellular communication study.

Importance of Removing Lipoproteins from sEV

The presence of lipoprotein particles in blood complicates EV isolation, potentially affecting the outcomes of analyses or assays due to lipoproteins carrying similar cargos such as microRNAs. Recent studies indicate that traditional methods like ultracentrifugation or size exclusion chromatography (SEC) cannot fully separate EVs from lipoproteins. Therefore, improved separation of EVs from lipoproteins is crucial is essential for accurate EV studies and biomarker discovery from blood.

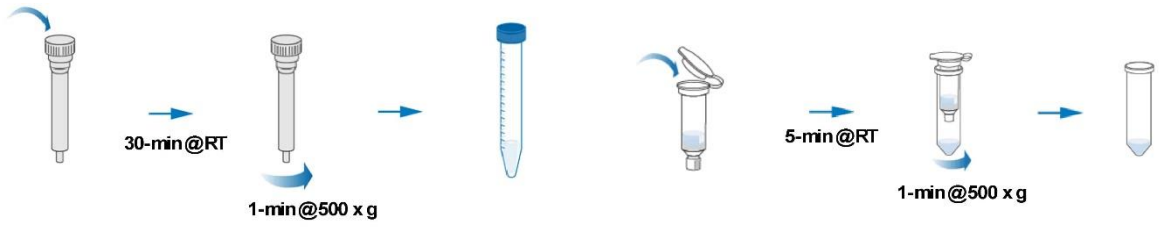
Purer EVs with Less Lipoproteins

Our cutting-edge SmartSEC-DeLipo™ kit was engineered to provide unmatched purity and quality while efficiently depleting lipoprotein contaminants. Harnessing the power of SmartSEC™ coupled with innovative lipoprotein removal technology, this kit streamlines the sEV isolation process, ensuring much purer sEVs samples for downstream analyses.



How It Works

The SmartSEC-DeLipo™ workflow is fast and easy. Simply apply 250 µL of cleared serum or plasma with additional column buffer or up to 0.5 mL of other biofluids directly to the pre-washed column, incubate, and centrifuge to elute the Evs then go through DeLipo column to remove lipoprotein from the isolated sEVs.



1. Load biofluid into pre-washed SmartSEC Single column and incubate 30-min at room temperature

2. Centrifuge for 1-min at 500 x g

3. EVs are in the flow-through

4. Load the flow-through into pre-washed DeLipo column and incubate 5 min at room temperature

5. Centrifuge for 1-min at 500 x g

6. DeLipo EVs are in the flow-through

Figure 1. Workflow of SmartSEC-DeLipo™

SBI
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Harnessing innovation to drive discoveries

SmartSEC-DeLipo™ isolates much purer sEV

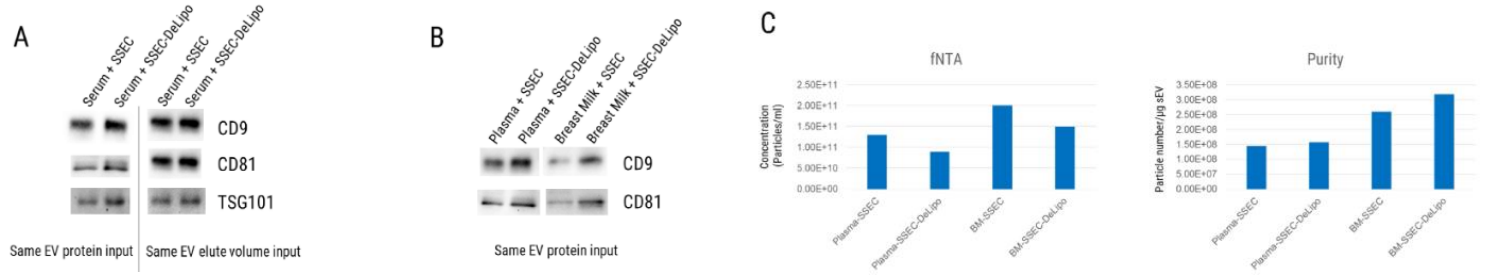


Figure 2. sEV isolated with SmartSEC-DeLipo™ is much purer. (A) sEV isolated from 250ul of serum with SmartSEC-DeLipo™ shows higher expression of EV markers, such as CD9, CD81 and TSG101 than those isolated with SmartSEC™ single when same amount of EV protein were applied for western blot. When same volume of eluted sEV samples were applied for western blot, EV markers' expression is about the same for sEV isolated from 250ul of serum with SmartSEC-DeLipo™ or SmartSEC™ single. (B) sEV isolated from 250ul of plasma or breast milk with SmartSEC-DeLipo™ shows higher expression of EV markers, such as CD9, CD81 and TSG101 than those isolated with SmartSEC™ single when same amount of EV proteins was applied for western blot. (C) fNTA data shows that sEV particle number were decreased in plasma or breast milk sample when isolated with SmartSEC-DeLipo™ in comparison with that isolated with SmartSEC™ single. However, when purity was evaluated with EV particle number per same amount of EV protein, sEV isolated with SmartSEC-DeLipo™ demonstrates higher purity than those isolated with SmartSEC™ single.

SmartSEC-DeLipo™ removes most lipoproteins

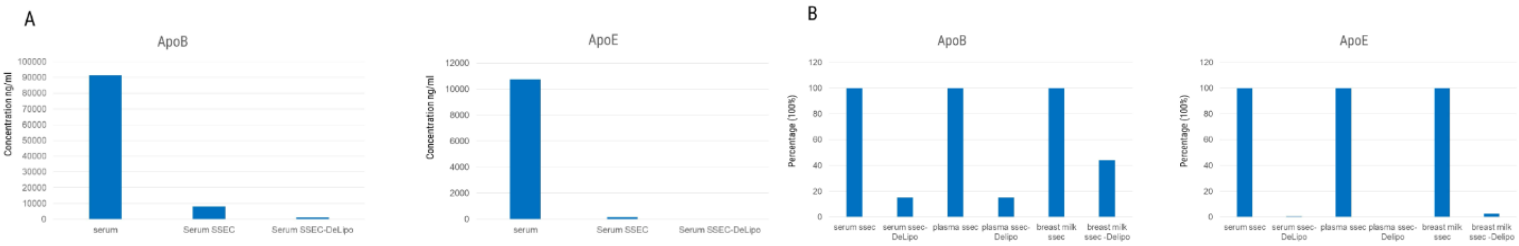
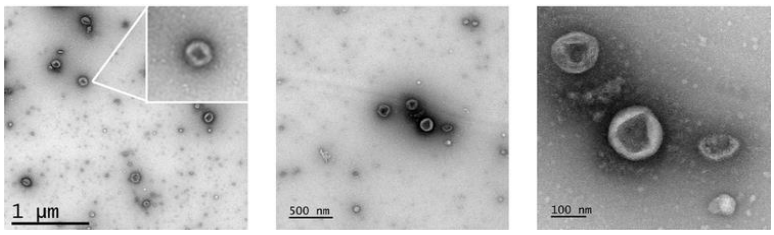


Figure 3. Most of the Lipoproteins are removed in sEV isolated with SmartSEC-DeLipo™. (A) ApoB and ApoE lipoproteins' concentrations were evaluated in serum sample, sEV isolated from serum with SmartSEC™ single and sEV isolated from serum with SmartSEC-DeLipo™ by ELISA. SmarSEC™ single dramatically reduced Lipoproteins in isolated sEV and SmartSEC-DeLipo further deplete the remaining Lipoproteins in yield sEV. (B) Percentage of ApoB and ApoE depletion was calculated based on ApoB and ApoE concentration in sEV isolated with SmartSEC-DeLipo™ vs. SmartSEC™ single from serum, plasma and breast milk samples.

SmartSEC-DeLipo™ isolated sEV possess typical sEV morphology



See more data by visiting **systembio.com**

Figure 4. sEV isolated with SmartSEC-DeLipo™ shows typical EV morphology. Transmission electron microscopy (TEM) of sEVs isolated from serum using SmartSEC-DeLipo™ possess typical EV morphology—intact vesicles with a double layer of membranes.

Table1. SmartSEC-DeLipo™ Product Offering by SBI

Cat #	Description	Size
SSEC-DLP-200A	SmartSEC-DeLipo Single EV Isolation System	10 Reactions
DLP-20A	DeLipo lipoprotein removal column	20 Reactions
SSEC-DLP-096A	SmartSEC-DeLipo HT EV Isolation System	96 Reactions

Experience the future of sEV isolation with SmartSEC-DeLipo™ Advanced sEV Isolation Kit. Unlock unparalleled purity, efficiency, and reliability, and accelerate your journey towards groundbreaking discoveries in the dynamic field of extracellular vesicle biology.

SBI System Biosciences
Innovation to accelerate discoveries

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