Size Exclusion Chromatography (SEC) is considered one of the best methods for isolating and purifying exosomes and extracellular vesicles (EVs) from different matrices. In particular, this technique is very efficient for separating exosomes from the circulating proteins and does not affect the original shape and functionality of the vesicles. HBM has developed different classes of SEC columns for EV purification: PURE-EV, miniPURE-EV and maxiPURE-EV are three different sizes of columns for EV purification from very small volumes (100 μl) to large volumes (up to 20 ml) of different matrices. The procedure of exosome isolation with PURE-EV columns is very easy and fast taking only 15 minutes of time.

<table>
<thead>
<tr>
<th>Cat. Code</th>
<th>Volume</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBM-PEV-##</td>
<td>500 μl - 2 ml</td>
<td>5 or 10 Columns</td>
</tr>
<tr>
<td>HBM-mPEV-##</td>
<td>100 μl - 500 μl</td>
<td>10 or 20 Columns</td>
</tr>
<tr>
<td>HBM-mxPEV-##</td>
<td>5 ml - 20 ml</td>
<td>3 or 6 Columns</td>
</tr>
</tbody>
</table>

**Applications**
- Exosome isolation from biofluids and cell media.
- Purification of pre-isolated EVs from contaminants
- Isolated exosomes are suitable for multiple analysis (NTA, ELISA, FACS, WB, EM, MS, nucleic acid extraction, etc).

**Advantages**
- Easy and fast protocol (turnaround time approximately 15 minutes).
- Isolate exosome from small volumes of sample.
- Reusable up to 5 times.
- Easy to store and ship (4°C).
PURE-EVs: isolation of highly pure exosomes in approximately 15 minutes.

PURE-EVs column was rinsed with 1 ml of human plasma, 24 fractions (500 μl each one) have been collected and analyzed by ELISA ExoTEST™ assay and by BCA test for determining respectively the exosome and total protein content. EVs are eluted in fractions 6 - 11 (turnaround time approximately 15 min), whereas plasma circulating proteins corresponded to the fractions 14 - 24.

1. Exosome isolation from human plasma by PURE-EVs columns.

2. Matching of EV quantity and total protein content eluted in each single fraction. ExoTEST™ analysis shows that EVs are eluted in fractions 6-11 and successfully separated by the plasma circulating proteins (eluted in fractions 14-24). ExoTEST results expressed in ratio-to-background.

The 24 fractions were collected in 4 groups (1-6; 7-12; 13-18; 19-24) and analyzed by NTA with Nanosight. Figures 3, 4 and 5 show the correlations between the eluted fractions and the performed analysis: positive matching between ExoTEST™ results and the particles analysis by NTA (fig 3), complete separation of EV from the plasma circulating proteins (fig 4 and 5).

3. EV elution peak. ExoTEST™ vs NTA analysis

4. EV elution vs circulating protein elution. NTA analysis compared to protein BCA test

5. EV elution vs circulating protein elution. ExoTEST™ analysis compared to protein BCA test

PURE-EVs: make your EVs suitable for multiple analyses.

PURE-EVs can be used with MWCO concentrator for concentrating EVs once eluted by the SEC column. Concentrator allows concentrated EVs preparation to the level required for different analyses (western blotting, nucleic acids extraction, mass spectrometry etc).

6. NTA analysis of exosome eluted by PURE-EVs column not concentrated and concentrated 10X with MWCO concentrator.

7. WB of common exosome markers in 20 μl of concentrated EVs.