Extracellular vesicles (EVs) such as exosomes and microvesicles serve as messengers of intercellular network, allowing exchange of cellular components between cells. EVs carry lipids, proteins, and nucleic acids derived from their producing cells, and have potential as biomarkers specific to cell types and even cellular states. However, conventional methods (such as ultracentrifugation or polymeric precipitation) for isolating EVs have disadvantages regarding purity and feasibility. Here, we have developed a novel method for EV purification by using Tim4 protein, which specifically binds the phosphatidylserine on the outer surface of their lipid bilayer. It has been confirmed that human, mouse, and bovine EVs can be purified by this isolation kit.

### MagCapture™ Exosome Isolation Kit PS

- **Sample Type:** cell culture supernatant, serum, plasma, urine, etc.
- **Method:** affinity purification
- **Features:**
  - Easy
  - Intact
  - Stable
  - Efficient isolation of highly purified extracellular vesicles
  - Can purify any EVs which expose phosphatidylserine on the outer surface of their lipid bilayer
  - Mini-UC

The appearance of EVs isolated by the Tim4-affinity purification method matched the typical saucer-like shape as previous reported, and almost no contaminants could be observed. In contrast, EVs isolated by UC were accompanied by a large number of small precipitates probably derived from supplements added in advance into the medium.

**The Tim4-affinity purification method could isolate about twice as many EVs as the Ultracentrifugation method.** In contrast, equal amount of proteins were detected in EV fractions using BCA protein assay.

**Conclusions**

- Tim4-affinity purification method could be used for the efficient isolation of EVs
- Tim4-affinity purification method can purify intact extracellular vesicles
- EVs purified by the Tim4-affinity purification method were efficiently taken up by the recipient cells
- High correlation of microRNA profiles between Tim4-affinity purification method and ultracentrifugation was revealed.