

PS AFFINITY ISOLATION AND DETECTION OF EXOSOMES

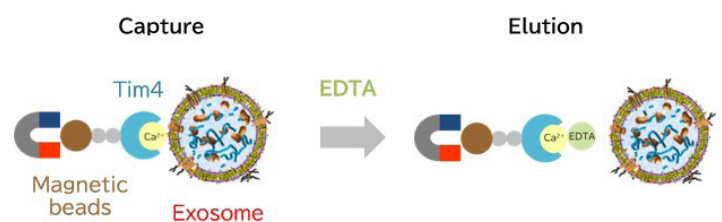
EXOSOME RESEARCH TOOLS

After being secreted from various cells, extracellular vesicle (EV) exosomes stably exist in body fluids. They are currently attracting a lot of clinical attention as a messenger for cell-to-cell communication and biomarkers for disease, among many others.

The T-cell immunoglobulin domain and mucin domain-containing protein 4 (Tim4) is a phagocytic receptor of macrophages for apoptotic cells. Phosphatidylserine (PS) is expressed on the outer surface of EV membranes¹. Tim4 binds to PS via the IgV domain in the extracellular region in a calcium ion-dependent manner. This method uses magnetic beads coated with Tim4 to capture exosomes in the presence of calcium ions, and isolates exosomes by adding chelating agents².

MAGCAPTURE™ EXOSOME ISOLATION KIT VER2

FUJIFILM Wako's kit adopts the novel PS Affinity Binding Method by using PS-binding protein Tim4. EV's are captured in a metal ion-dependent manner and are subsequently eluted from magnetic beads with a metal-chelating reagent at neutral pH.



Isolation and purification of exosomes by the PS affinity method

Purification Methods Comparison Table

Method	Exosome Purity	Exosome Recovery	Intact EV Recovery
PS affinity method	■■■■	■■■	Yes
Ultracentrifugation	■■	■■	Yes
Polymer-based precipitation	■	■■	Yes
Density gradient centrifugation method	■■■	■■	Yes
Size fractionation method	■■■	■■	Yes
Exosome surface antigen affinity method (using antibodies)	■■■	■■	No

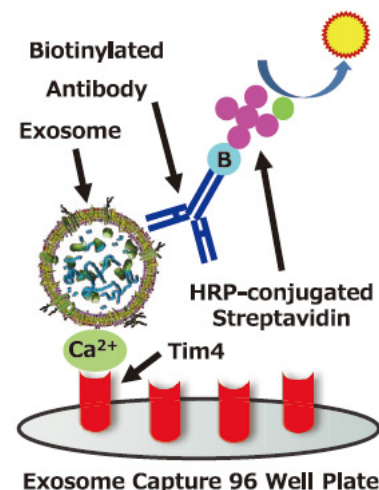
*Comparison table is based on FUJIFILM Wako survey.

PS CAPTURE™ RESIN KIT

This kit easily isolates high purity EV exosomes that have PS on the surface of their membranes by PS Affinity method, using a resin immobilising PS-binding protein. A nonmagnetic resin carrier captures EVs in a metal ion-dependent manner like the MagCapture™ kits. EVs are close to intact under neutral conditions can be eluted with a chelating agent.

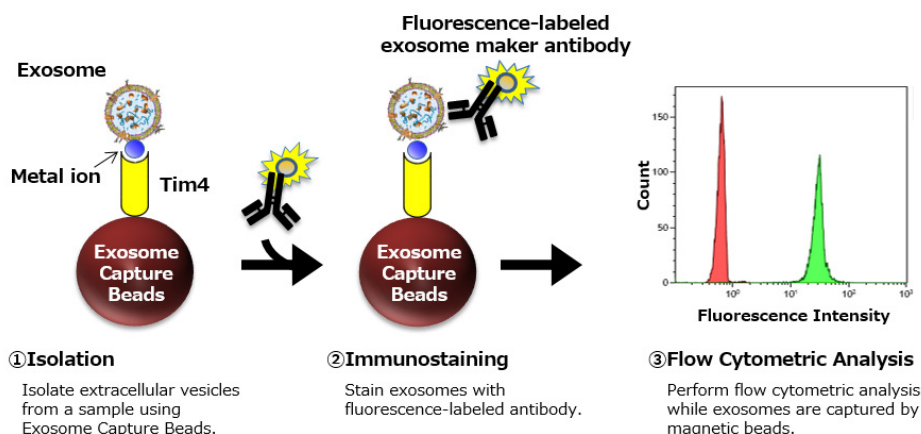
PS CAPTURE™ EXOSOME ELISA KIT

Applying PS affinity binding of Tim4 protein with exosomes to ELISA offers a higher sensitivity than Western Blot analysis and conventional ELISA methods. Uses control anti-CD63 antibody with either HRP-conjugated anti mouse IgG antibody or HRP-conjugated streptavidin. Allows qualitative and quantitative analysis of extracellular vesicles.



PS CAPTURE™ EXOSOME FLOW CYTOMETRY KIT

Detects any surface marker proteins on EVs with high sensitivity by flow cytometry after capturing EVs by PS Affinity Method using magnetic beads. Direct qualitative analysis without purification of EV's.



Isolation & Purification

Product Code	Description	Pack Size
294-84101	MagCapture™ Exosome Isolation Kit PS Ver.2	2 Tests
290-84103	MagCapture™ Exosome Isolation Kit PS Ver.2	10 Tests
290-80301	PS Capture™ Exosome Isolation Resin Kit	1 Kit

Detection & Quantification

Product Code	Description	Pack Size
297-79201	PS Capture™ Exosome ELISA Kit (Anti Mouse IgG POD)	96 Tests
298-80601	PS Capture™ Exosome ELISA Kit (Streptavidin HRP)	96 Tests
297-79701	PS Capture™ Exosome Flow Cytometry Kit	300 Tests

See full range of Exosome Research Kits and Optimisation products:
www.alphalabs.co.uk/research-reagents/exosome-research



References

1. Trajkovic, K. et al.: Science, 319(5867), 1244(2008).Ceramide triggers budding of exosome vesicles into multivesicular endosomes
2. Miyawaki, M. et al.: Nature, 450(7168), 435(2007).Identification of Tim4 as a phosphatidylserine receptor

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