

Antibodies for Exosome Isolation

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ExoTrap™ Human Exosome Isolation Spin Column Kit for Protein Research (Featuring CD9 mAb 12A12)

Feature and Advantages

- High purity exosome can be isolated from serum, plasma, urine, saliva and cell culture supernatant within 30 minutes (All human samples has been tested).
- Spin column type which is easy to use

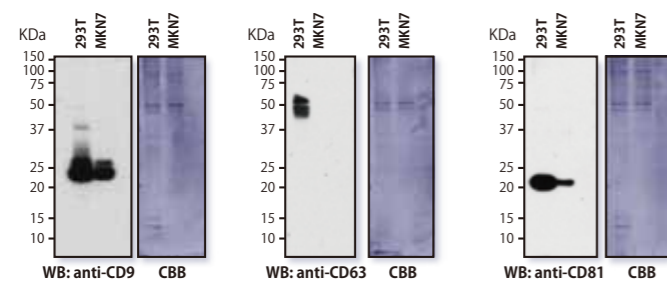


Application Examples

Example : Western blot

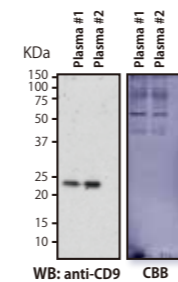
Proteins from exosome were eluted from SDS sample buffer 50 μ L by ExoTrap™. Exosome markers were detected by Western blot.

1. Isolation of exosome from cell culture supernatant



Sample: 293T, MKN7 cell culture supernatant
ExoTrap™ Primary antibody: anti CD9
Apply amount: 20 μ L/lane

2. Isolation of exosome from human serum



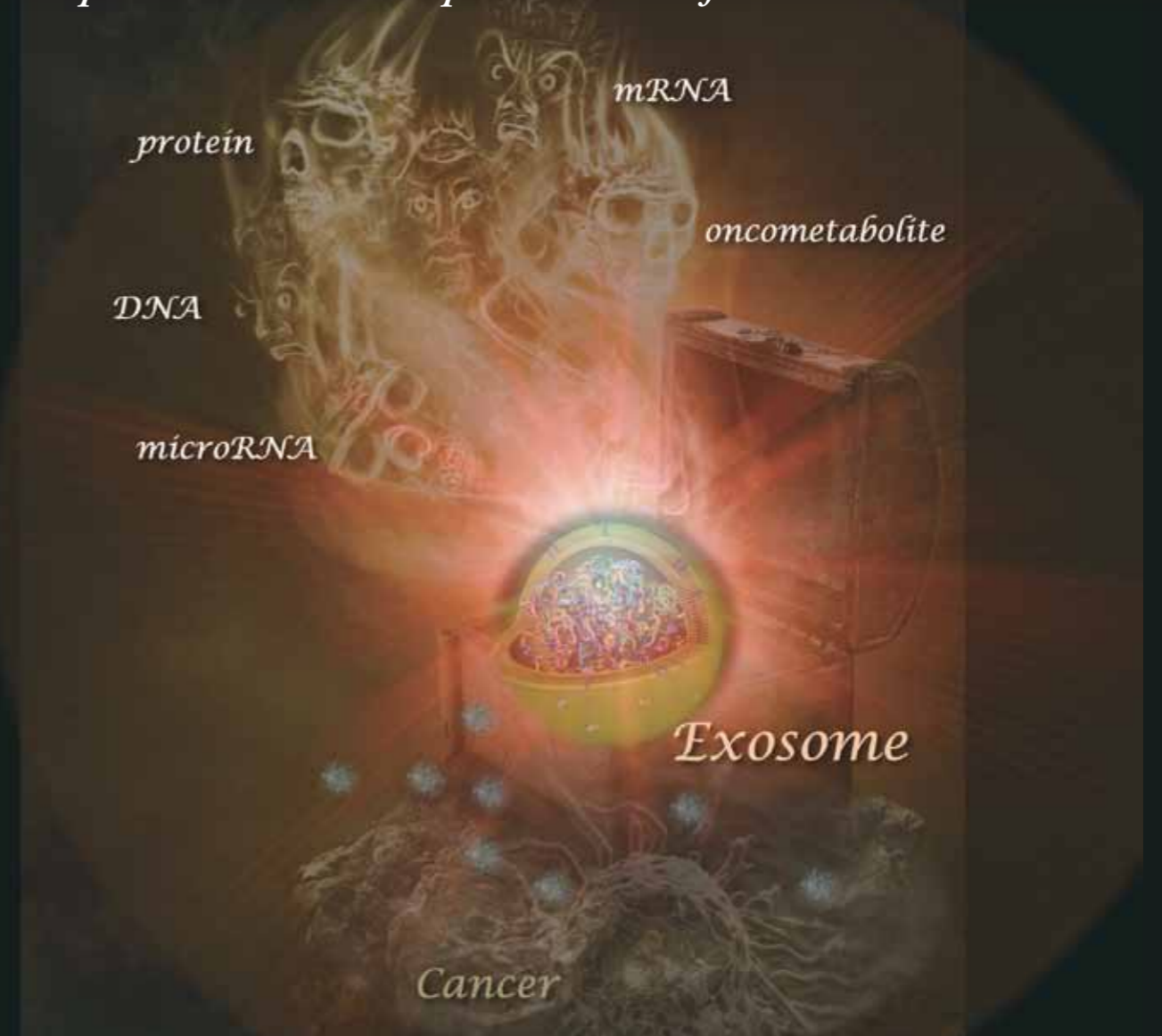
CBB: Coomassie Brilliant Blue
Sample: human serum treated by EDTA
ExoTrap™ Primary antibody: CD9
Apply amount: 20 μ L/lane

Product List

Description	Cat. No.	Size	Storage
ExoTrap™ Exosome Isolation Spin Column	CSR-SHI-EXO-K010	10 prep.	4°C

Anti CD9, CD63, CD81 Antibodies

ExoTrap™ Exosome Isolation Spin Column Kit for Protein Research



Background

Exosomes are cell-derived vesicles formed by a lipid bilayer membrane, and its diameter is 30-100 nm. Exosomes are observed in body fluid, such as saliva, blood, urine, amniotic fluid, malignant ascites, and are secreted from cultured cells. Recently, it has been shown that exosomes include various proteins and RNAs, which have a possibility to function in intercellular signal transduction. These products are the antibodies which can specifically detect CD9, CD63 and CD81 known as exosome markers. These antibodies are suitable for isolation of exosome by immunoprecipitation. ExoTrap™ Spin Columns utilize immobilized CD9 antibody to capture exosomes from biological fluids in as little as 30 minutes. The contents of the captured exosomes are then readily processed for downstream analysis by western blotting, mass spectrometry, PCR, or sequencing, etc.



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Basic structure of exosome

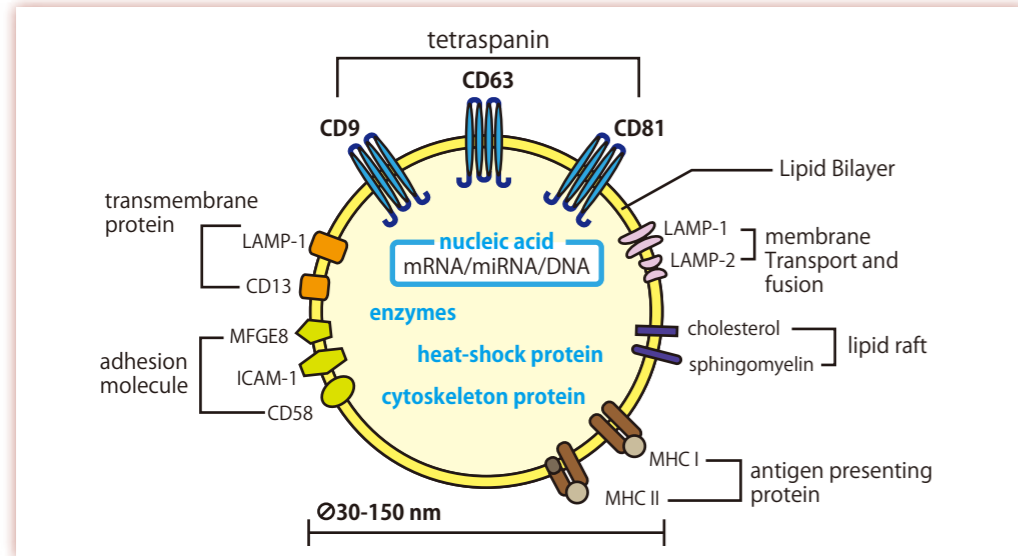
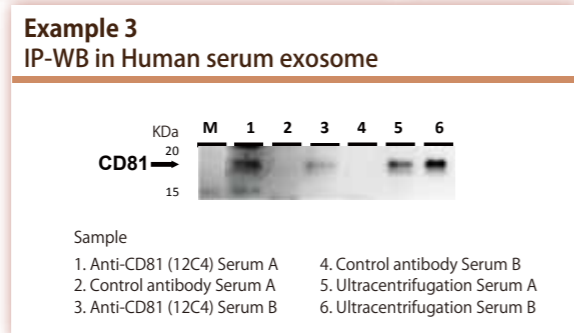
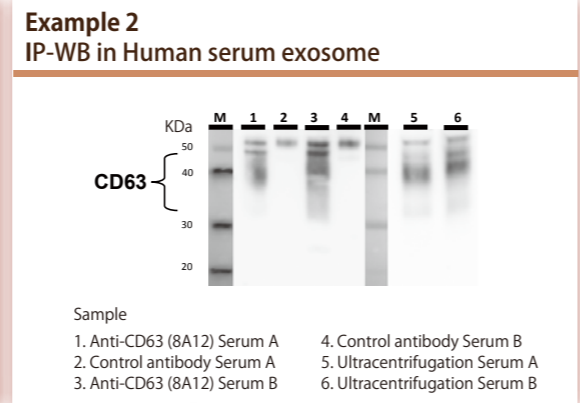
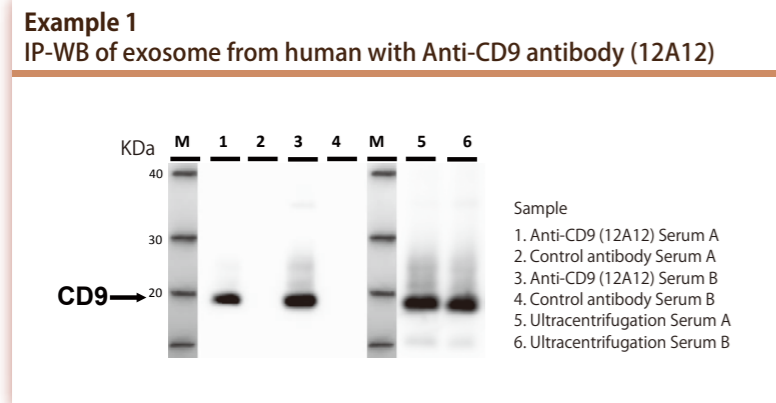


Figure. Generic exosome shown with molecules commonly found associated with exosomes. Not all molecules will be found with any given exosome and other molecules may also be found.

Anti CD9, CD63, CD81 Antibodies

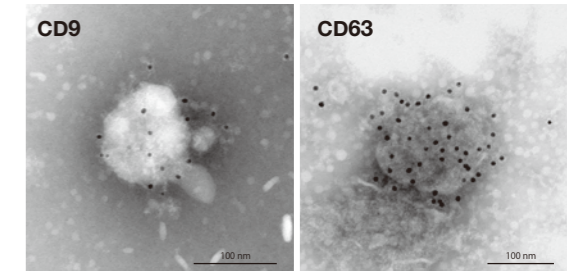
Feature	Advantages
<ul style="list-style-type: none"> monoclonal human only efficient not cross reactive with other tetraspanin 	<ul style="list-style-type: none"> High specificity for exosome membrane proteins CD9, CD63, CD81 Nearly 100% of exosomes in a 150 µL sample can be isolated by using only 1 µg of antibody Supported samples: CD9 ... serum, CD63 ... serum, culture supernatant, CD81 ... serum, culture supernatant Useful for analyses of exosome surface antigen proteins, endogenous RNA (miRNA) and proteins

Application Examples



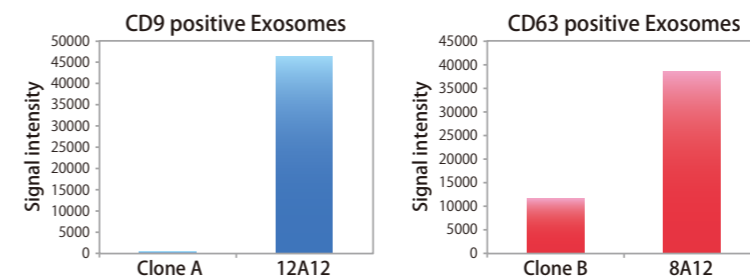
Example 4
Immunoelectron microscopy images of EV from human a breast cancer cell lines labelled with anti-human CD9 antibody and anti-human CD63 antibody.

CD9 and CD63 molecules on the surface of extracellular vesicle (EV) from human breast cancer cell line (MDA-MB-231-luc-D3H2LN)) were detected by anti-human CD9 antibody (SHI-EXO-M01) and anti-human CD63 antibody (SHI-EXO-M02).



Data provider: Nao Nishida, Division of molecular and cellular medicine, National cancer research institute
Citation: Nishida-Aoki N et al.: *Mol Ther*, 25:181-191, 2017
Reference : 1. Yoshida Y, et al.: *J Extracell Vesicles*, 2: 20424, 2013
2. Yoshida Y, et al.: *Nat Commun*, 5: 3591, 2014

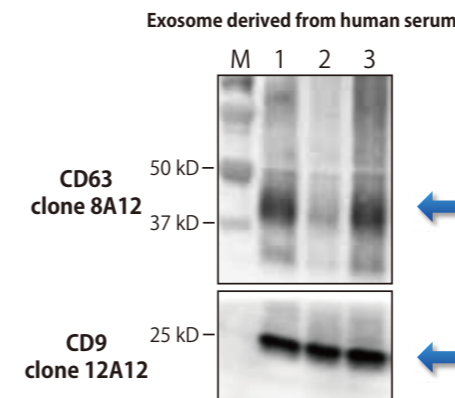
Example 5
Comparison data of Exosome antibodies



(Left) Detection of Exosome was done with Exosome antibody to CD9 and compared results. Although clone A could not gain any signals, 12A12 could detect good signal with sufficient strength.

(Right) Detection of Exosome was done with Exosome antibody to CD63 and compared results. Clone A could gain weak signal but 8A12 could detect good signal with sufficient strength, much stronger than clone A.

Example 6
Experimental example of western blot analysis for Exosome markers



(Above) Result of western blot detection for CD63 positive Exosomes from human serum with clone 8A12 (anti human CD63).

(Below) Result of western blot detection for CD9 positive Exosomes from human serum with clone 12A12 (anti human CD9).

Product List

Description	Cat. No.	Size	Storage
Anti Human CD9 for Exosome Isolation, 12A12	CAC-SHI-EXO-M01-50	50 µL [1 mg / mL]	-20°C
	CAC-SHI-EXO-M01	100 µL [1 mg / mL]	
Anti Human CD63 for Exosome Isolation, 8A12	CAC-SHI-EXO-M02-50	50 µL [1 mg / mL]	-20°C
	CAC-SHI-EXO-M02	100 µL [1 mg / mL]	
Anti Human CD81 for Exosome Isolation, 12C4	CAC-SHI-EXO-M03-50	50 µL [1 mg / mL]	-20°C
	CAC-SHI-EXO-M03	100 µL [1 mg / mL]	