FUJIFILM
Value from Innovation

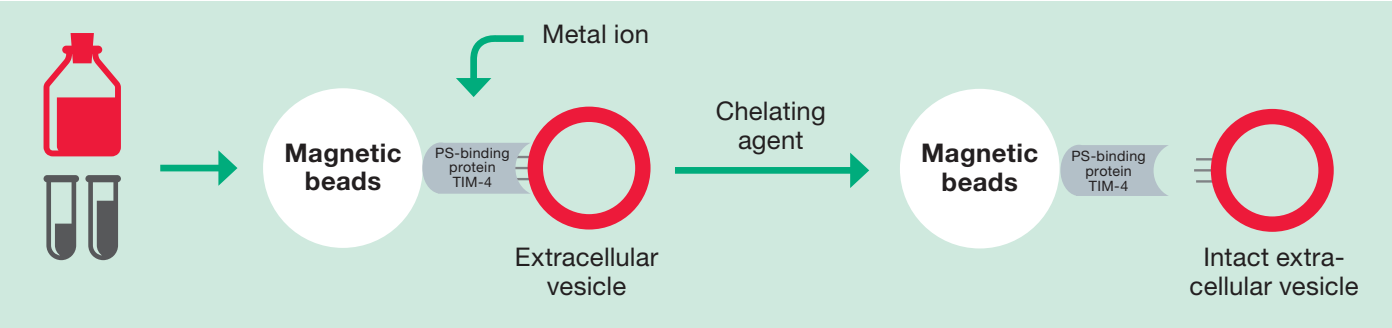
Wako

MagCapture™ EXOSOME ISOLATION KIT PS Ver.2

EXOSOME ISOLATION BY A NOVEL AND IMPROVED AFFINITY METHOD

INTRODUCTION

MagCapture™ Exosome Isolation Kit PS Ver.2 adopts a novel affinity purification method using magnetic beads and a phosphatidylserine (PS)-binding protein. By using a phosphatidylserine (PS)-binding protein, extracellular vesicles are captured in a metal ion-dependent manner and are subsequently eluted from magnetic beads with a metal-chelating reagent at neutral pH.



Features

+ Isolation by PS affinity method
+ Ultracentrifugation is not required
+ High purity and high yield of intact EVs
+ Highly reproducible yield
+ Improved recovery rate
+ Short operation time (~1.5 hours)
+ No preservatives (less cytotoxicity)

Applicable Samples

+ Cell culture supernatant
+ Serum, plasma
+ Urine, saliva, etc

Kit Component

		2 TESTS	10 TESTS
1	Biotin Capture Magnetic Beads	120 µL × 1 tube	600 µL × 1 tube
2	Biotin-labeled Exosome Capture	20 µL × 1 tube	100 µL × 1 tube
3	Exosome Immobilizing/Washing Buffer (10×)	5 mL × 1 bottle	25 mL × 1 bottle
4	Exosome Binding Enhancer (500×)	300 µL × 1 tube	1500 µL × 1 tube
5	Exosome Elution Buffer (10×)	300 µL × 1 tube	1500 µL × 1 tube
6	Reaction Tubes	4 tubes	22 tubes

ORDERING INFORMATION

WAKO CODE	PRODUCT NAME	STORAGE CONDITION	PACKAGE SIZE
294-84101	MagCapture™ Exosome Isolation Kit PS Ver.2 NEW	Keep at 2-10 °C	2 Tests
290-84103	MagCapture™ Exosome Isolation Kit PS Ver.2 NEW	Keep at 2-10 °C	10 Tests

COMPARISON WITH OTHER PURIFICATION METHODS

METHOD	EXOSOME PURITY	EXOSOME RECOVERY	INTACT VESICLES RECOVERY
PS affinity method	+ + + + +	+ + + +	Yes
Ultracentrifugation	+ +	+ +	Yes
Polymer-based precipitation	+	+ +	Yes
Exosome surface antigen affinity method (using antibodies)	+ + + + +	+ +	No

+ Very low + + Low + + + Medium + + + + High + + + + + Very High

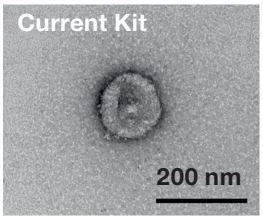
COMPARISON WITH CURRENT EV ISOLATION KIT

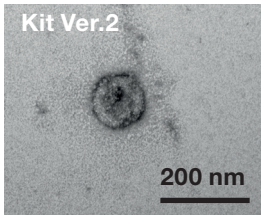
	CURRENT KIT	VER. 2
Recovery amount (culture supematant & blood sample	+ + +	+ + + +
Reaction time	3 hour +	1 hour +
Reusability (Magnetic beads)	5 times	5 times
Cell cytotoxicity (Elution buffer)	depending on cell lines	low

+ Very low + + Low + + + Medium + + + + High + + + + + Very High

EVs from MSC culture supernatant were isolated by our current kit (code: 299-77603, 293-77601) and the new Ver.2 kit and examined by TEM, nanoparticle tracking analysis (NTA), and Western blot.

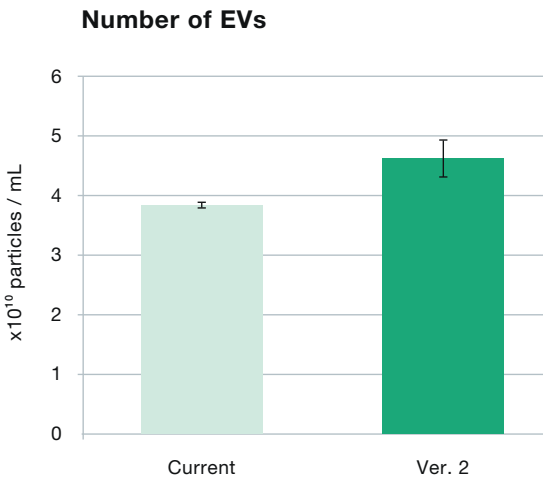
(1) EV morphology



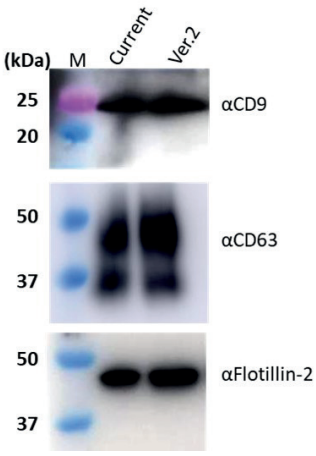


EVs with more round and uniform morphology could be obtained via isolation by the new Ver.2 kit.

(2) EV purity and yield



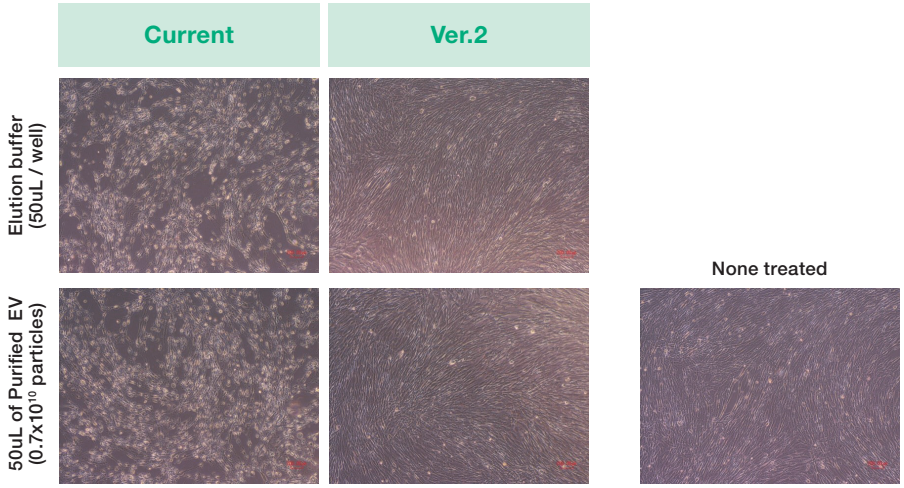
Kit Ver.2 isolates about 1.3 - 1.5 times more EVs than the current kit.



Comparison of EV markers by Western Blot.

(3) Cell cytotoxicity

EVs from COLO201 cell culture supernatant were isolated and purified by the current kit and Ver.2 kit. Same amount of purified EVs and the exosome elution buffer were added into human normal fibroblasts cells.



After 48 hours, cell morphological changes and cell death were observed with the current kit. In contrast, these effects could not be obtained for Ver.2 kit. Ver.2 kit is applicable for uptake experiments (in vitro or in vivo) without buffer exchange.

REFERENCE

1. A novel affinity-based method for the isolation of highly purified extracellular vesicles, W. Nakai, T. Yoshida, D. Diez, Y. Miyatake, T. Nishibu, N. Imawaka, K. Naruse, Y. Sadamura and R. Hamayama, Sci. Rep., 6, 33935 (2016).

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