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## ISOLATION

### MagCapture™ Exosome Isolation Kit PS Ver.2

MagCapture™ Exosome Isolation Kit PS Ver.2 can purify EVs exposing phosphatidylserine on the outer surface of their lipid bilayer. EVs from various animal species and samples, such as a human, mouse, and bovine can be purified.

- + FEATURES**
- Isolation of high purity & 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.

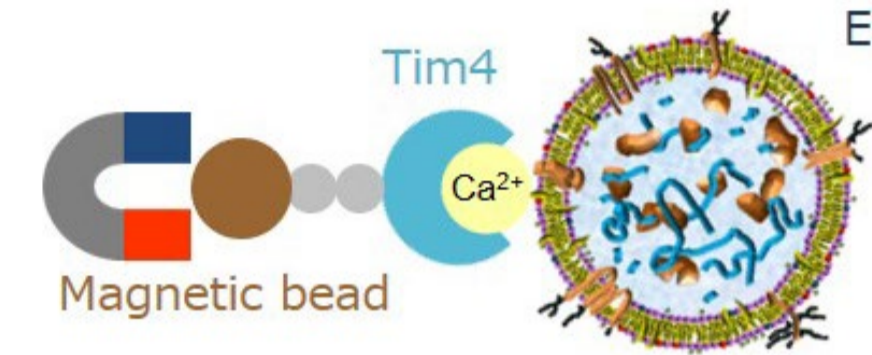


Figure 1

Product Name	Code No.	Package Size
MagCapture™ Exosome Isolation Kit PS Ver.2	294-84101	2 Tests
	290-84103	10 Tests

**+ PRINCIPLE: TIM-4 Technology**

**Capture**  
(in a Ca<sup>2+</sup> dependent manner)



**Elution**  
(by using chelators such as EDTA)

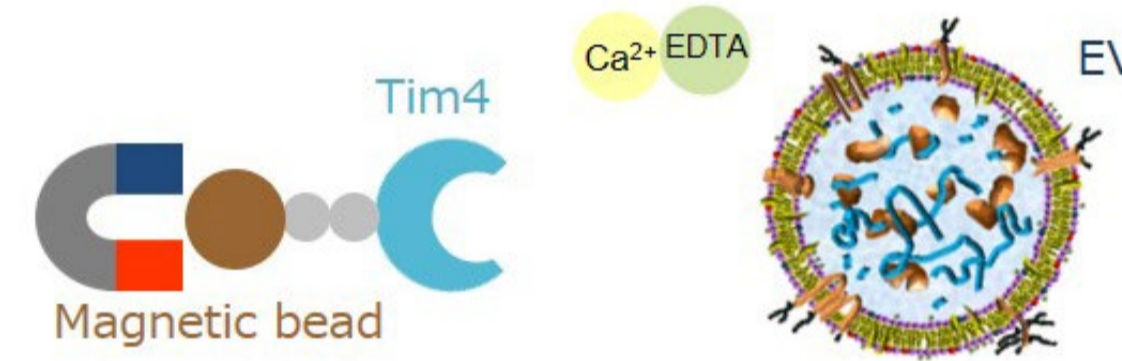


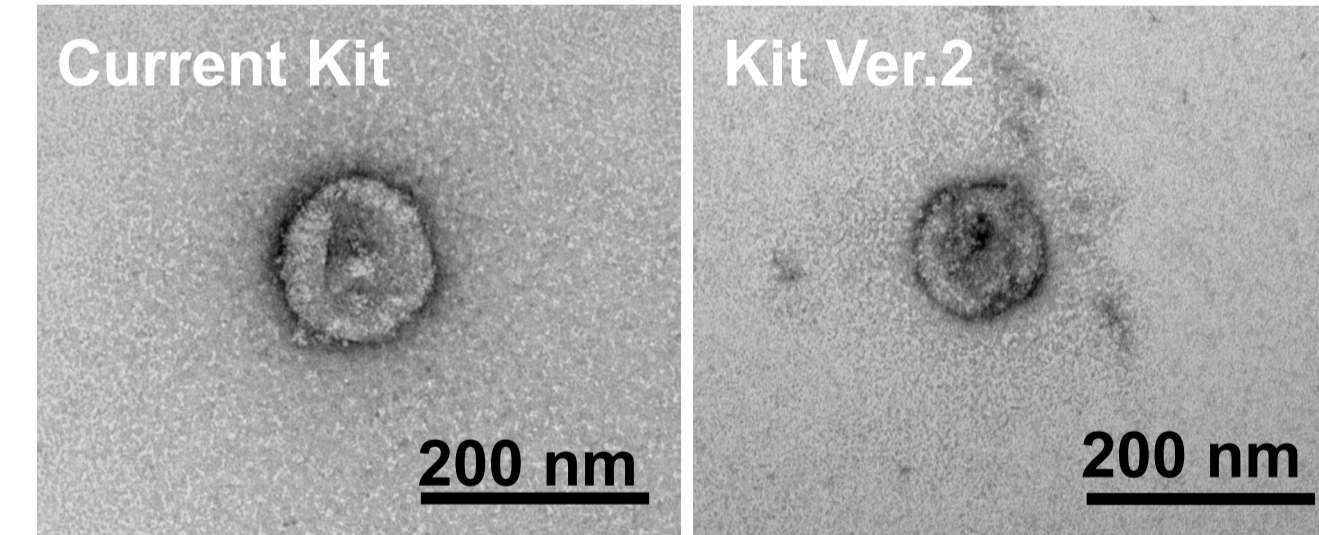
Figure 2

## + COMPARISON

### (1) new Ver.2 kit vs. current kit:

EVs in 2K supernatant of BM-MSC were isolated by our current kit and Ver.2 kit and examined by TEM, NTA, and Western blot.

### i. EV morphology



TEM → round & uniform morphology

### ii. EV purity and yield

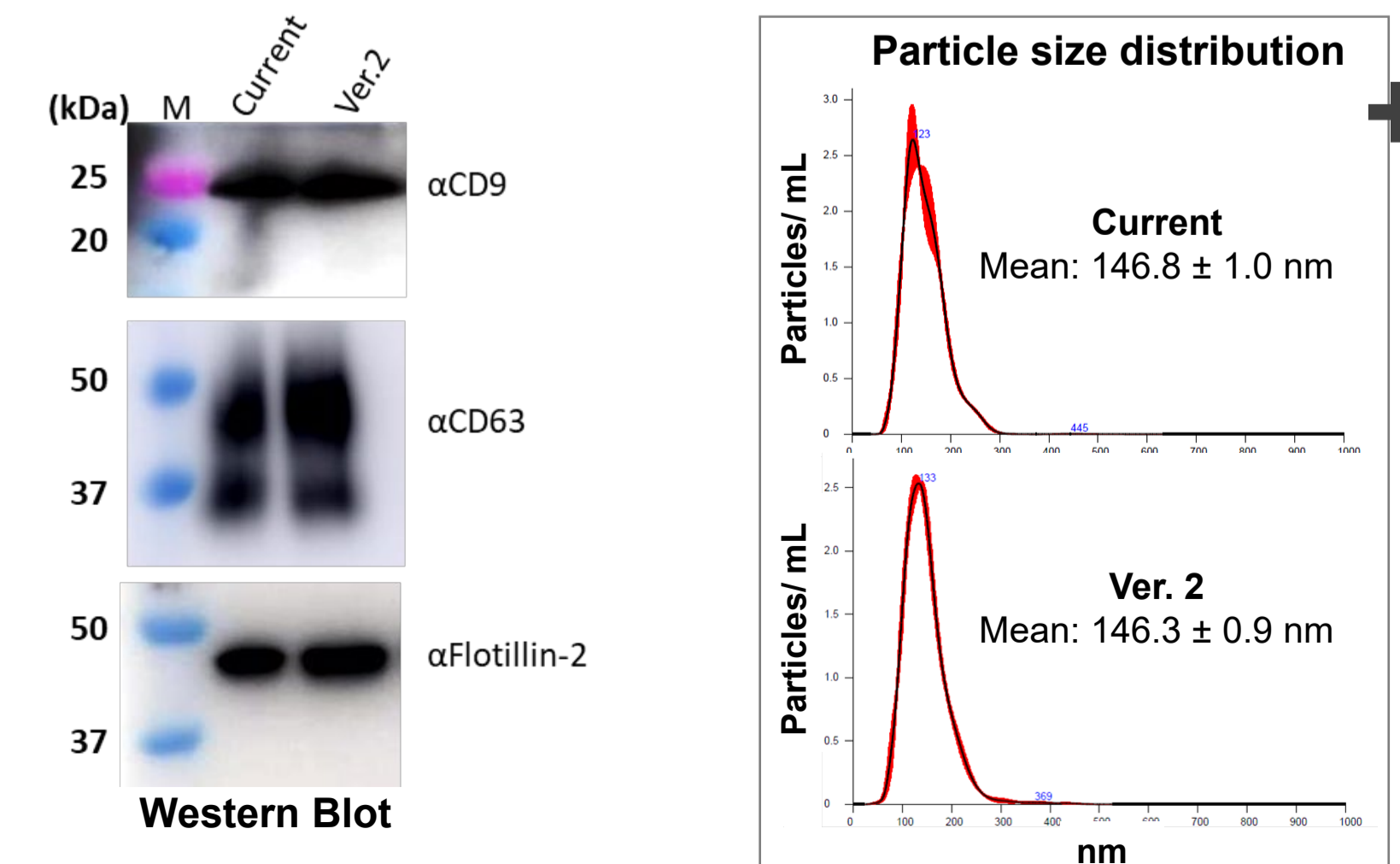


Figure 3

### (2) to conventional methods:

Method	PS-affinity	UC	Density (UC-Sucrose Cushion)	Size exclusion chromatography (SEC)	Polymer
EVs Purity (Exosome protein coverage)	■■■■	■■	■■■	■■■	■
State of the EVs	Intact	Intact, but aggregated	Intact	Intact	Intact
Operability	Easy and reproducible	Easy	Complex	Easy	Easy
Total protein yield	■	■■■	■■	■■	■■■■

### iii. Operation time

Significantly shorter separation time (3 h vs. ~1 h) with Ver.2 kit.

## DETECTION

### CD Capture Human Exosome ELISA Kit

**+ FEATURES**

- CD9/63/81 Ab sandwich ELISA
- Quantitative detection
- High sensitivity
- High specificity

**+ APPLICABLE SAMPLES**

- Purified EVs
- Cell culture supernatant
- Serum
- Plasma

Product Name	Code No.	Package Size
CD9-Capture Human Exosome ELISA Kit (Streptavidin HRP)	296-83701	96 Tests
CD63-Capture Human Exosome ELISA Kit (Streptavidin HRP)	290-83601	96 Tests
CD81-Capture Human Exosome ELISA Kit (Streptavidin HRP)	292-83801	96 Tests

**+ PRINCIPLE: Sandwich ELISA**

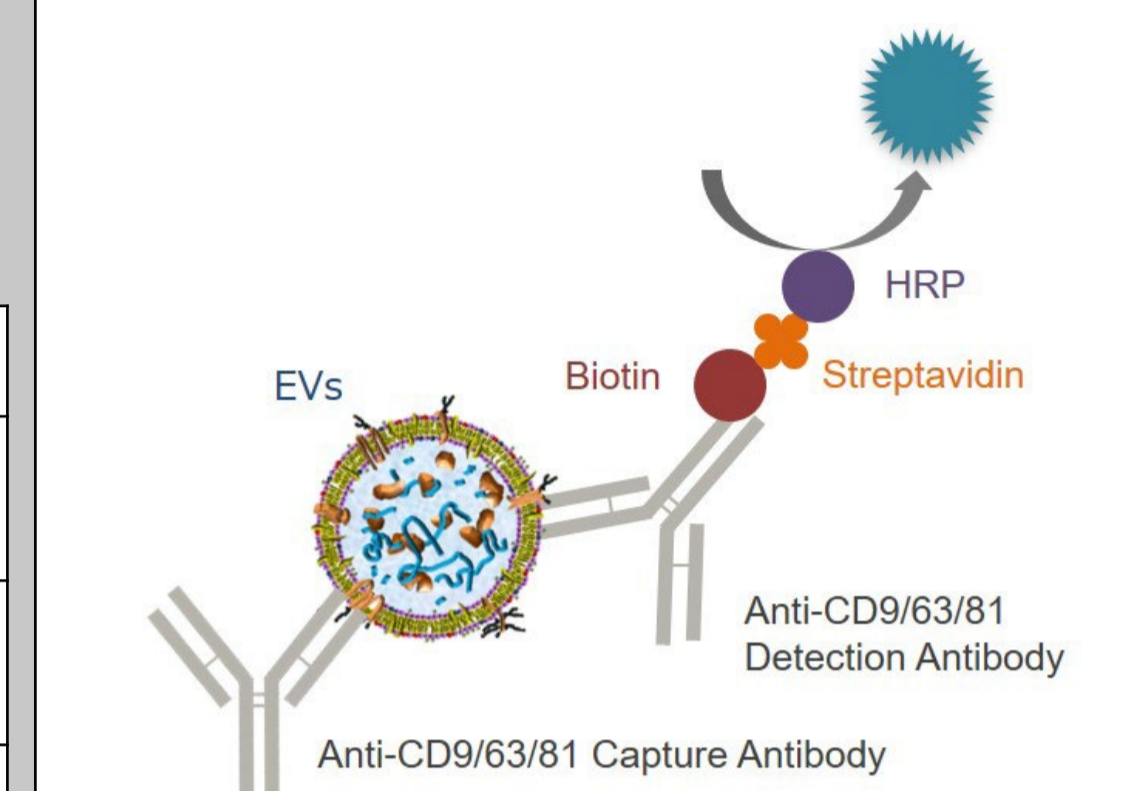


Figure 4

## + QUANTIFICATION

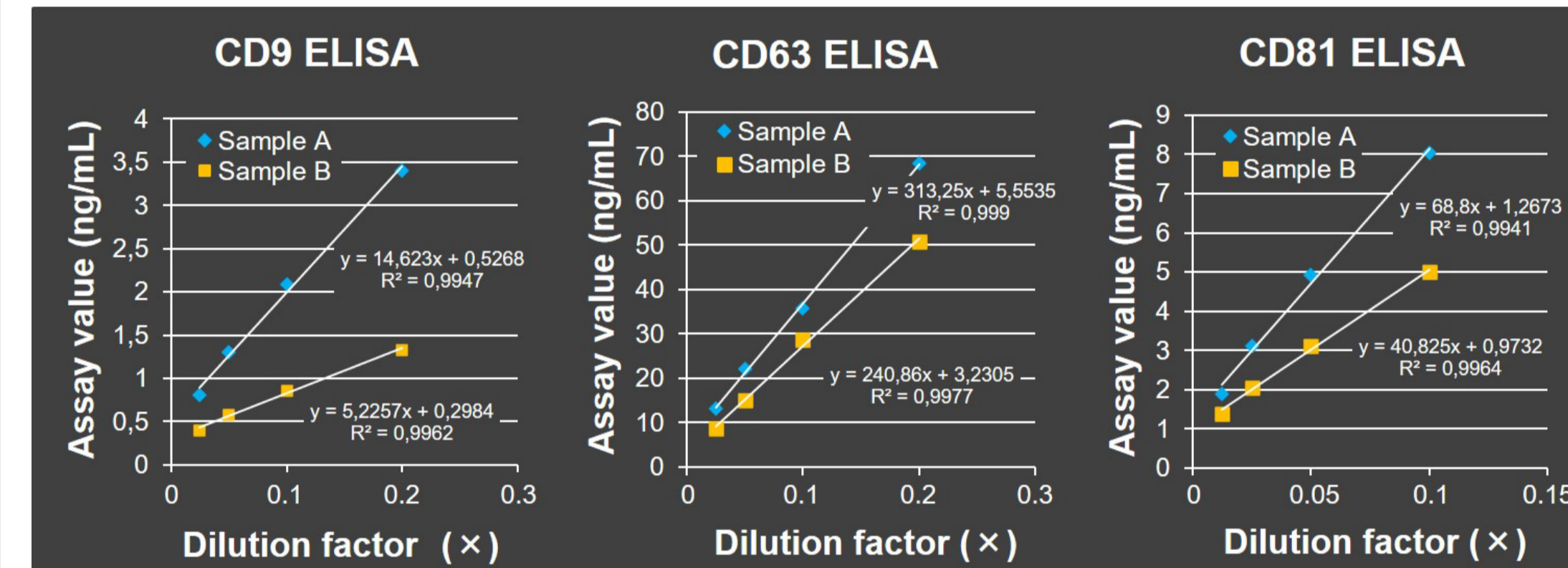


Figure 5

Calibrator: Exosomes, from COLO201 cells, purified (052-09301)

CD Capture ELISAs show good dilution linearity in human serum.

→EVs can be measured quantitatively.

## Extraction

### microRNA Extractor® Kit for Purified-EV

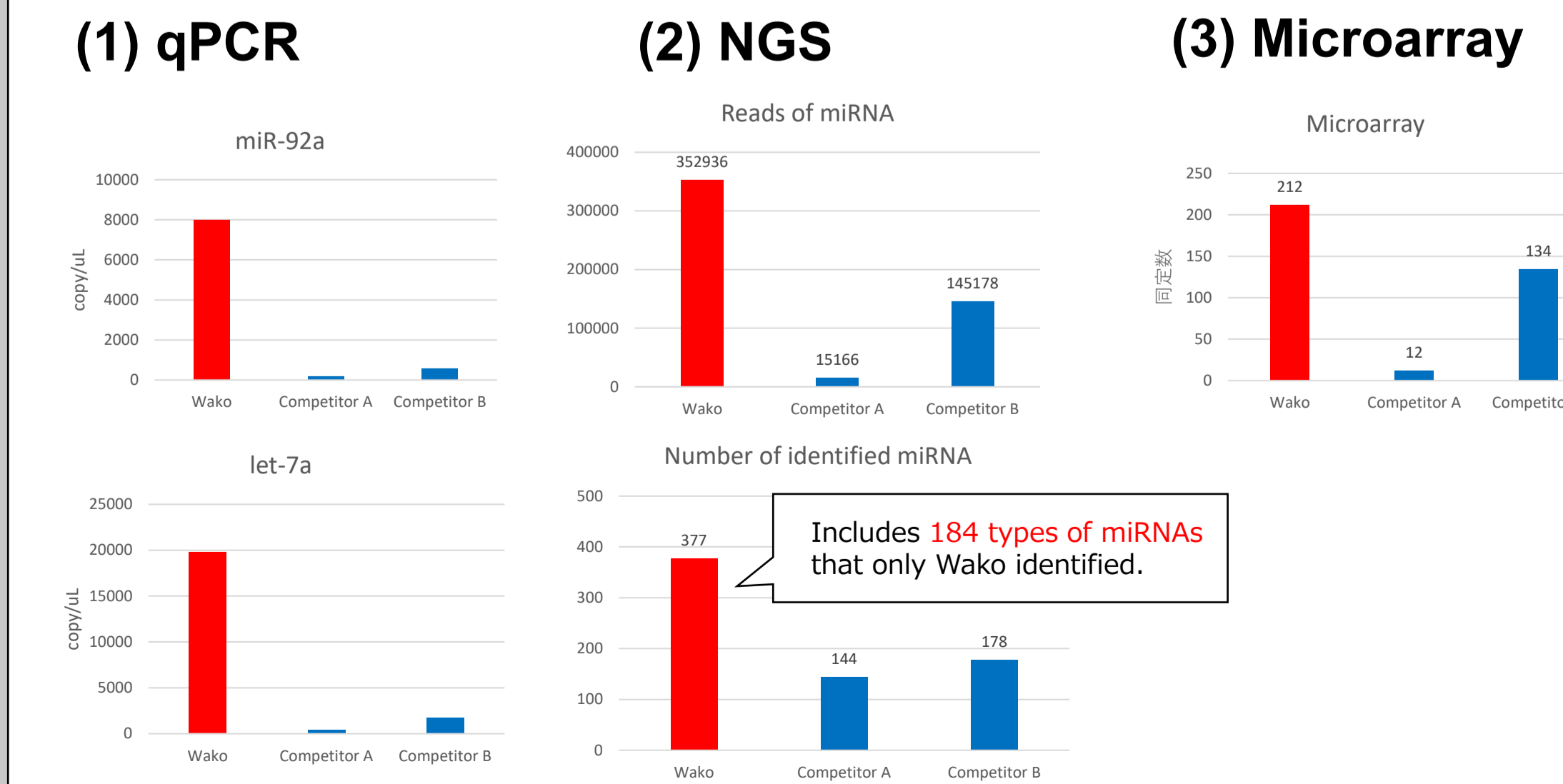
**+ FEATURES**

- High yield
- Recovering many types of microRNAs
- Obtaining high concentrated samples

Product Name	Code No.	Package Size
microRNA Extractor® Kit for Purified-EV	294-84601	20 Tests

- + APPLICABLE SAMPLES**
- Purified EVs

## + COMPARISON



microRNAs were extracted from purified-EVs using each kit, followed by qPCR, NGS and microarray.

→Yields and numbers of identified microRNAs using Wako were higher than competitors, and Wako's product can identify unique miRNA.

## PRODUCTION

### MSC EVs Production Medium (animal-free)

**+ FEATURES**

- Better EV yield than serum media
- Highly reproducible
- Serum-free and animal-free
- Maintains high cell viability
- Produces EVs with high activity
- Applicable to various growth media

**+ APPLICABLE CELLS**

- Bone marrow-derived MSC
- Adipose-derived MSC
- Umbilical cord-derived MSC

Product Name	Code No.	Package Size
EV-Up™ EV Production Basal Medium for MSC, AF	053-09451	95 mL
EV-Up™ MSC EV Production Supplement, AF	298-84001	For 100 mL

**+ PROTOCOL: EV Production MSC**

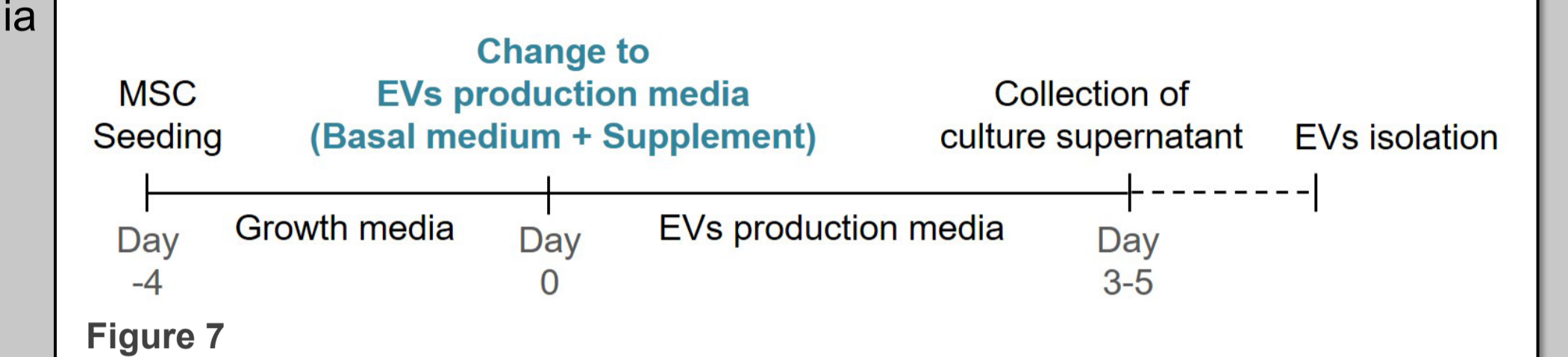


Figure 7

## + CELL VIABILITY

Sample: Human bone marrow-derived MSC

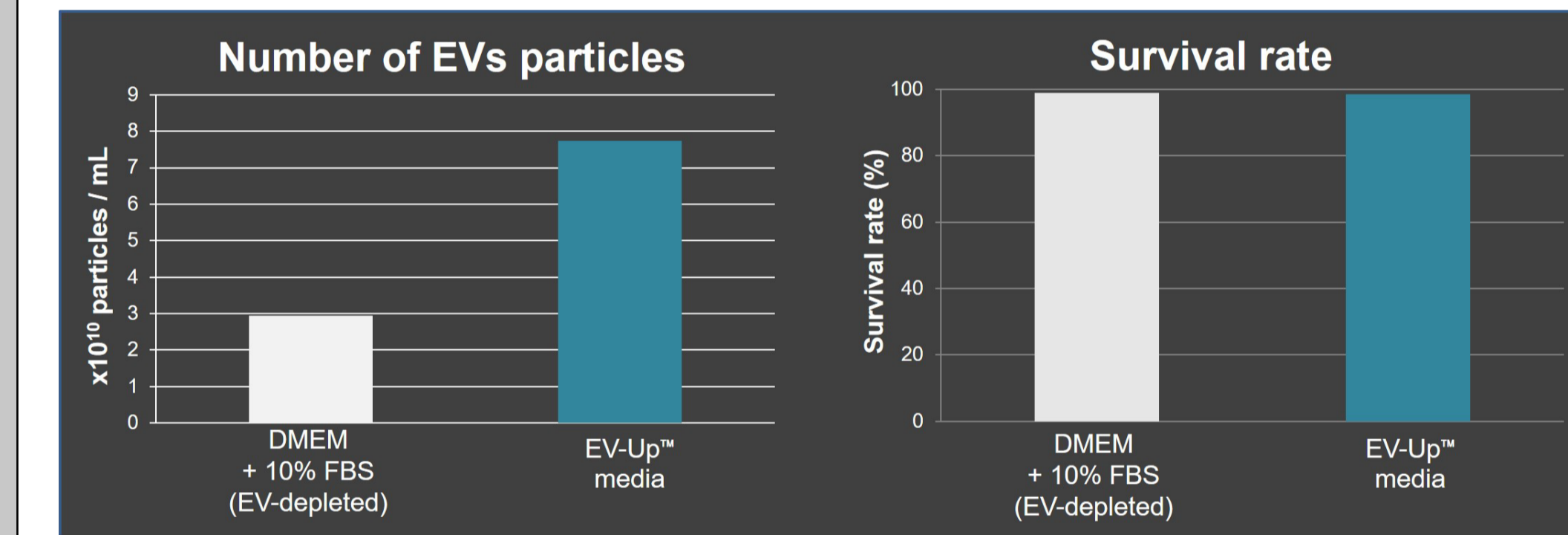


Figure 8

→ MSC cultured in EV-Up™ media released 2.6 times more EVs than in DMEM+10% EV depleted FBS.  
→ EV-Up™ produces EVs with comparable high MSC survival rate.

## + ANTI-FIBROTIC EFFECT

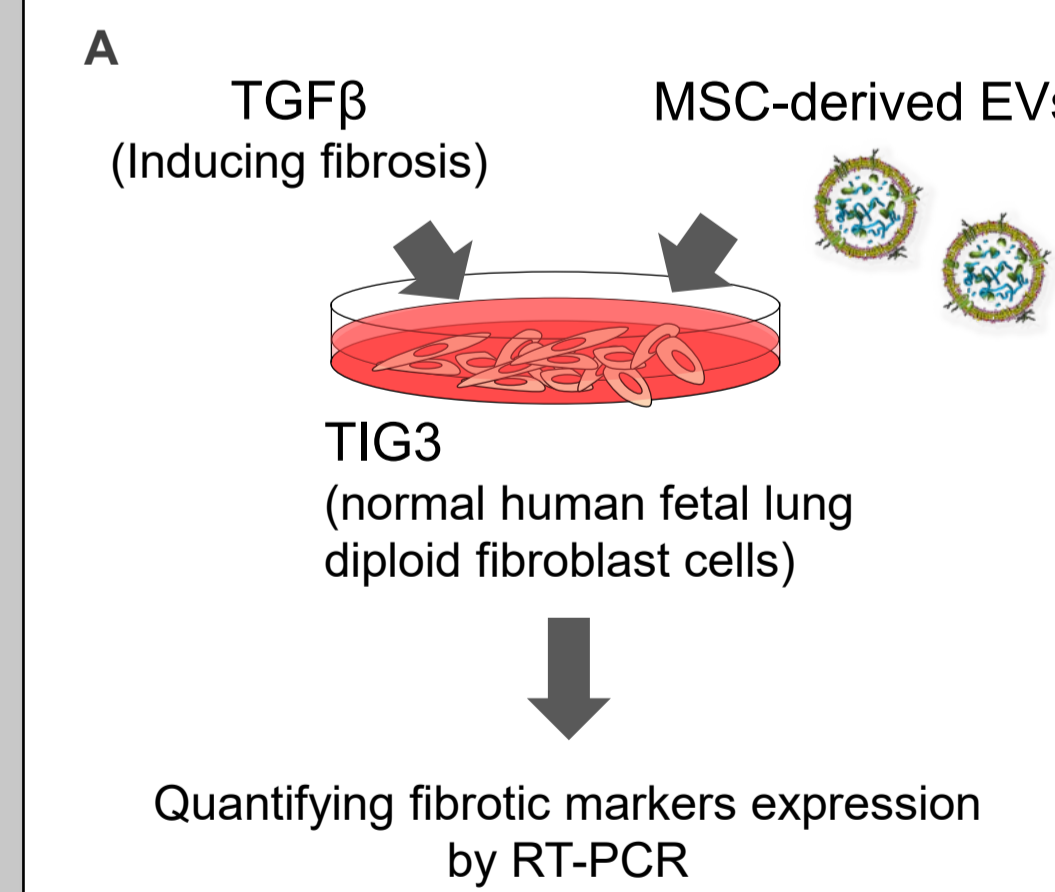
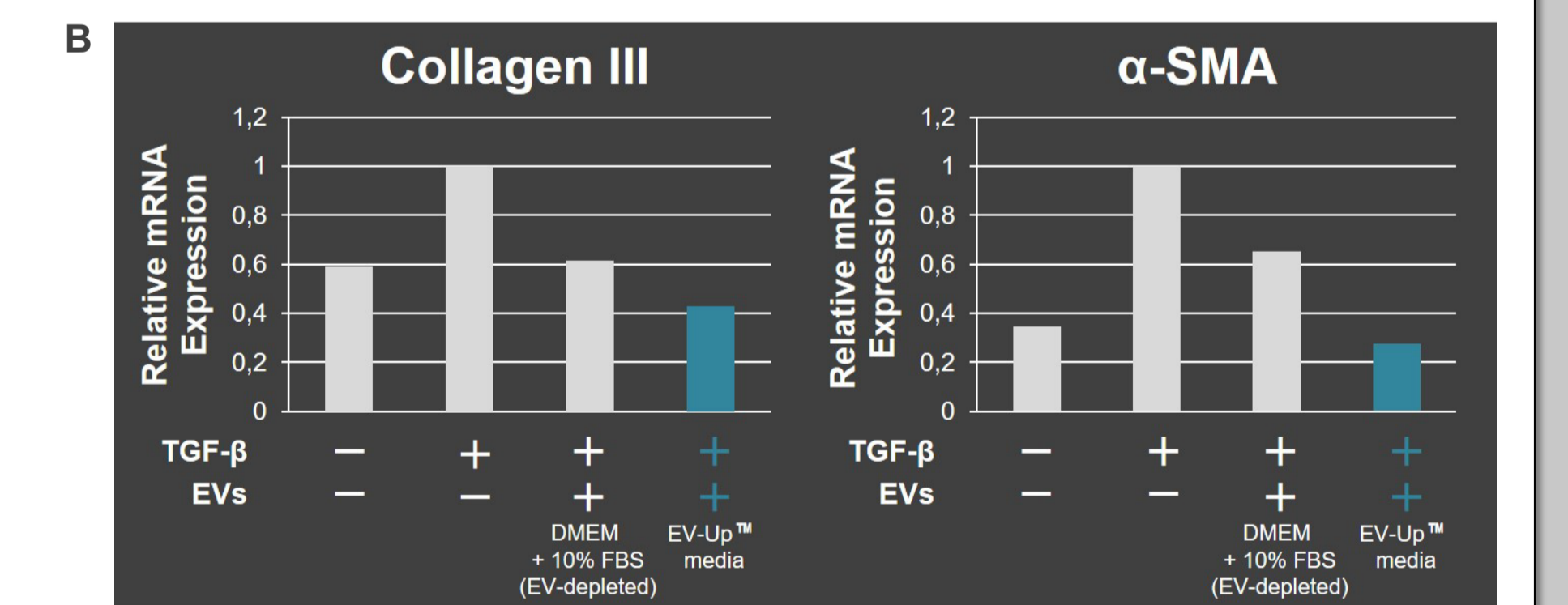


Figure 9



MSC EVs produced in EV-Up™ medium decreased the gene expression of fibrotic markers Collagen III and αSMA.

## CONCLUSIONS

- MagCapture™ Ver.2 and CD Capture ELISA can isolate and detect EVs derived from various samples more efficiently than current products.
- microRNA Extractor® Kit for Purified-EV delivers high concentrated RNA samples and show good results in the field of RNA analysis.
- EV-Up™ is a novel medium for MSCs that can lead to breakthroughs in EV production.