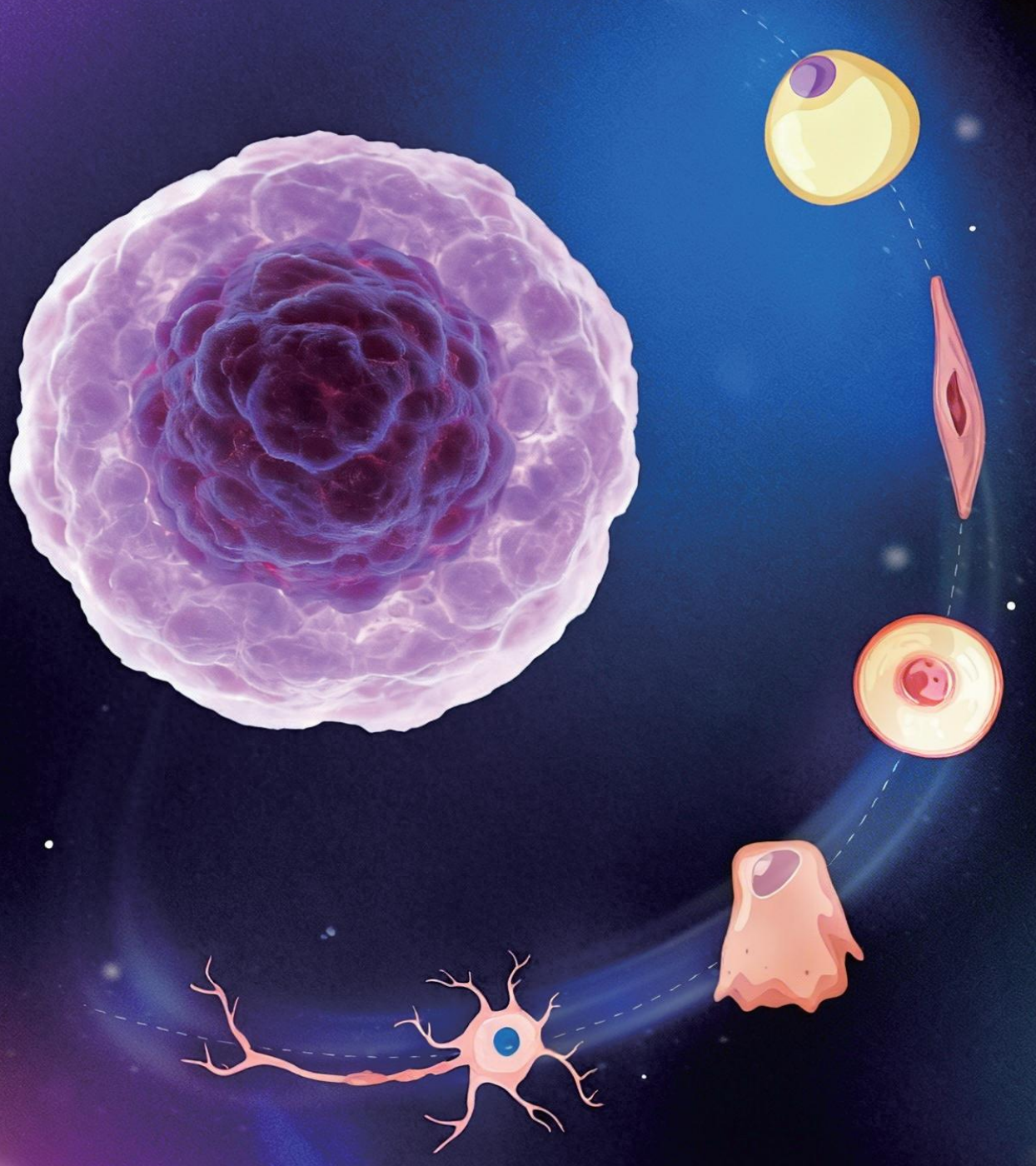
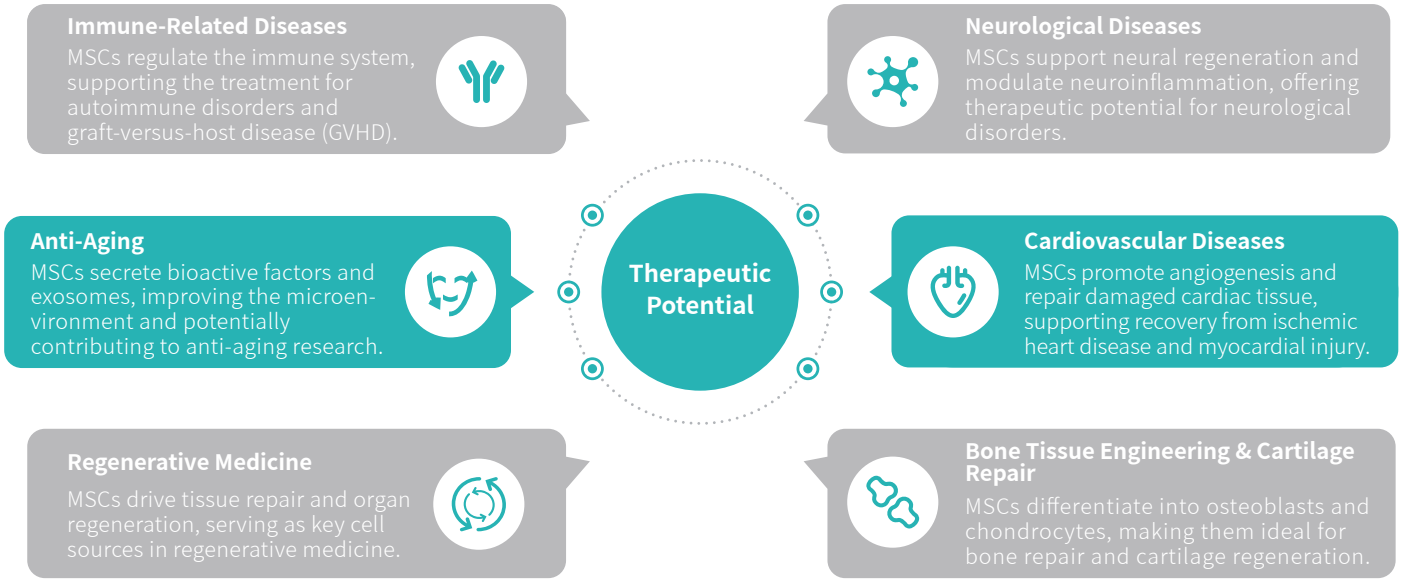
Procell

Mesenchymal Stem Cell Culture Solutions



Mesenchymal Stem Cells (MSCs) possess strong self-renewal capacity and multipotent differentiation potential, making them a widely used and promising cell source in tissue engineering and regenerative medicine.

Applications



Technical Challenges

Inconsistent cell adhesion
Limited scalability
Challenging stem cell isolation
Complex exosome purification procedures
Batch-to-batch variability
Low differentiation efficiency
Challenging exosome isolation
Serum-free culture
Loss of stemness
Limited passage capacity
Enzymatic digestion
Reduced proliferative capacity
Phenotypic drift
Low purity
Phenotypic instability
Spontaneous differentiation
Cellular senescence
Ultracentrifugation Heterogeneity

Procell leverages an internally validated cell bank, optimized culture systems, differentiation protocols, and exosome isolation protocols to address key research challenges and to enable stable expansion and versatile applications of MSCs.

Optimized MSC Expansion

MSC Serum-Free Media

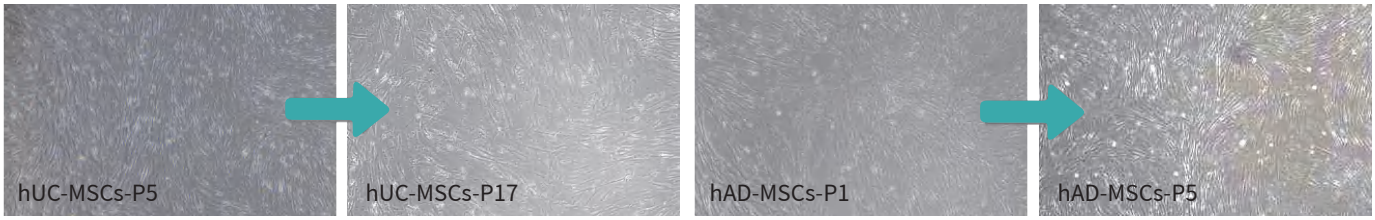
Product Features

- Broad Applicability: Suitable for the culture of various MSCs, including umbilical cord, adipose, and bone marrow-derived cells.
- Robust Cell Health: Rapid cell proliferation with a stable cellular state; reliably passaged beyond 10 generations. Human Umbilical Cord-Derived MSCs (hUC-MSCs) have been successfully expanded for over 17 generations.
- Stemness Preservation: Positive MSC markers ⩾ 90%, negative markers 0.2-5% within 10 passages.

Cat. No.	Product Name	Features
CM-SC01	Human Mesenchymal Stem Cells Serum-Free Medium	Defined formulation, serum-free, animal origin-free, free of exogenous exosomes, minimal batch-to-batch variation.
CM-SC02	Human Mesenchymal Stem Cells Serum-Free Medium, with Serum Replacement	Contains a serum replacement that provides serum-mimetic nutrients, eliminating risks associated with serum-derived factors.

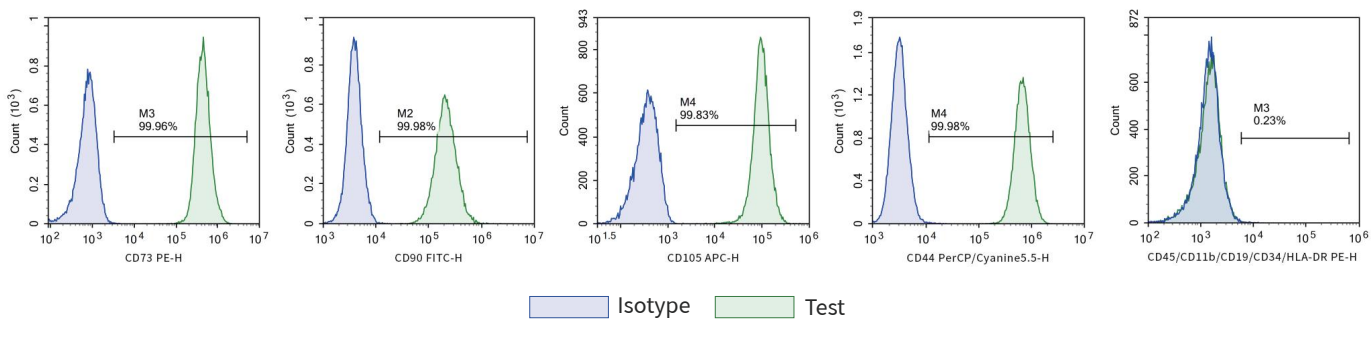
Culture Performance

Cell morphology of MSCs cultured in CM-SC01



hUC-MSCs (P5→P17) and Human Adipose-derived MSCs (hAD-MSCs) (P1→P5) exhibit consistently stable proliferation and morphology.

Flow Cytometry Identification



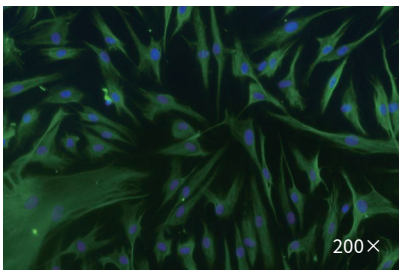
Flow cytometric analysis of hUC-MSCs (P5): Positive markers (CD73, CD90, CD105, CD44) >99%; Negative markers (CD45, CD11b, CD19, CD34, and HLA-DR) = 0.23%.

MSC Complete Media

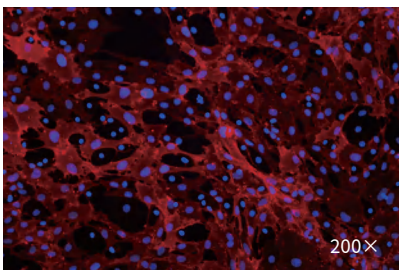
Mesenchymal stem cell complete medium is ready-to-use, cell culture-validated, and precisely formulated with basal medium, growth supplements, and antibiotics.

Cat. No.	Product Name
CM-H166	Human Bone Marrow Mesenchymal Stem Cell Complete Medium
CM-H246	Human Amniotic Mesenchymal Stem Cell Complete Medium
CM-R131	Rat Bone Marrow Mesenchymal Stem Cell Complete Medium
CM-R304	Rat Synovial Mesenchymal Stem Cell Complete Medium
CM-M131	Mouse Bone Marrow Mesenchymal Stem Cell Complete Medium
CM-M138	Mouse Adipose-derived Mesenchymal Stem Cell Complete Medium

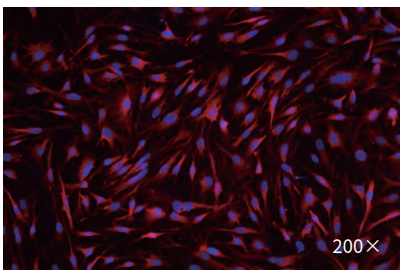
For more cell complete medium information, please visit www.procellsystem.com or contact local distributors.



Human Amniotic MSCs, CD44



Rat Synovial MSCs, CD90

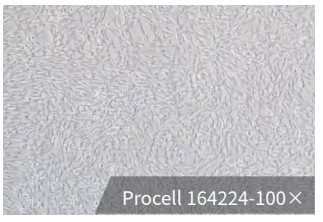


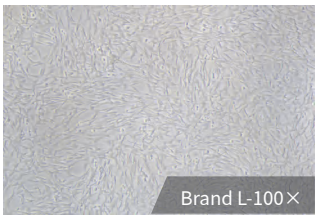
Mouse Bone Marrow MSCs, CD29

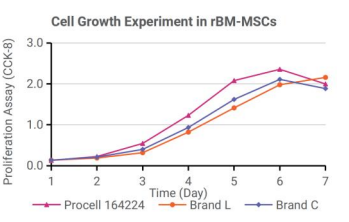
These MSCs were cultured in the corresponding complete media. Immunofluorescence staining confirmed marker expression with purity > 90%.

Fetal Bovine Serums

Cat. No.	Product Name	Features
164222	Exosome-Depleted Fetal Bovine Serum	⩾98% exosome removal to minimize background interference in exosome research.
164224	Fetal Bovine Serum for Mesenchymal Stem Cells	Batch-selected through rigorous cell culture screening and optimized for high-quality in vitro MSC culture.



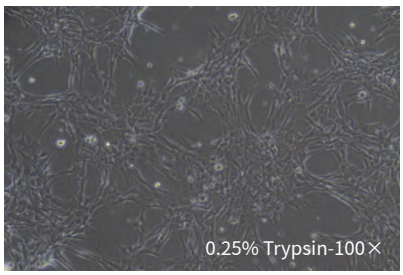


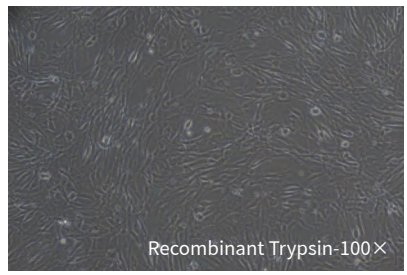


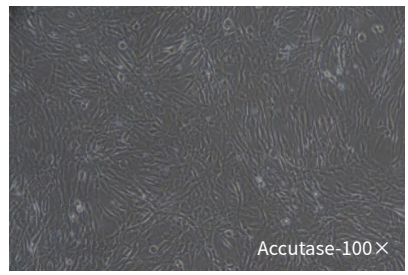
Procell Fetal Bovine Serum for Mesenchymal Stem Cells (Cat. No.: 164224) promotes stronger proliferation of Rat Bone Marrow Mesenchymal Stem Cells (rBM-MSCs) than other brands, with more uniform morphology and improved culture stability.

Cell Dissociation Reagents

Cat. No.	Product Name	Features
PB180240	Recombinant Trypsin Solution, without phenol red	Animal origin-free; enzyme inhibitor-free; dilution stops the activity.
PB180241	Recombinant Trypsin Solution, with phenol red	
PB180201	Accutase Cell Detachment Solution	Animal origin-free; enzyme inhibitor-free; dilution stops enzyme activity. Gentle and efficient digestion preserves cell viability.







hUC-MSCs at approximately 90% confluence were dissociated using three different enzymes and passaged at a 1:3 ratio, followed by 24 h of culture. Compared with Trypsin, cells treated with Recombinant Trypsin and Accutase exhibited improved growth conditions.

Efficient Induction for Directed Differentiation

Procell' s optimized Induced Differentiation Media are specifically developed to improve the efficiency and reliability of cell differentiation experiments.

Product Features

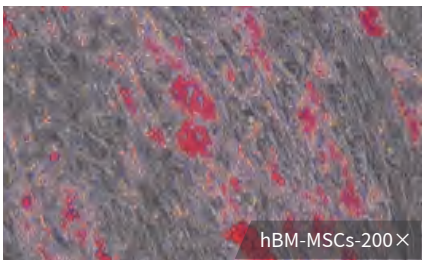
- Shorter Processing Time: Reduces the time required for osteogenic, adipogenic, and chondrogenic differentiation.
- Enhanced Effectiveness: Significantly improves cell differentiation into osteogenic, adipogenic, and chondrogenic lineages.
- Stable Performance: Proven through long-term testing to provide consistent and reliable differentiation.
- Contamination-free: Free from bacteria, fungi, mycoplasma, bacteriophages, and other contaminants, with low endotoxin levels.

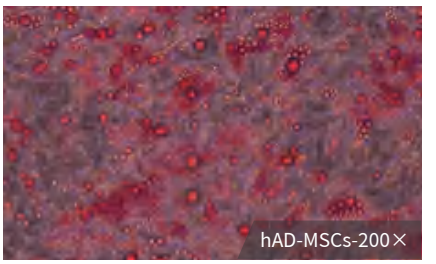
Product Categories

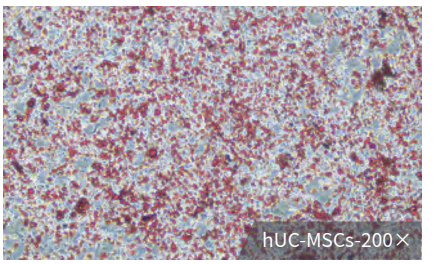
Adipogenic Differentiation Media

Cat. No.	Product Name
PD-016	Human Bone Marrow Mesenchymal Stem Cells Adipogenic Differentiation Medium
PD-006	Human Adipose-derived Mesenchymal Stem Cells Adipogenic Differentiation Medium
PD-019	Human Umbilical Cord Mesenchymal Stem Cells Adipogenic Differentiation Medium
PD-031	3T3-L1 (Mouse embryonic fibroblasts) Adipogenic Differentiation Medium

For more adipogenic differentiation medium information, please visit www.procellsystem.com or contact local distributors.





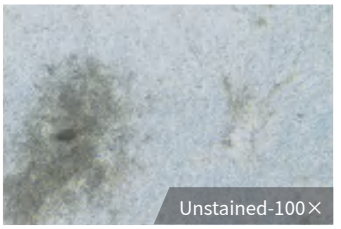


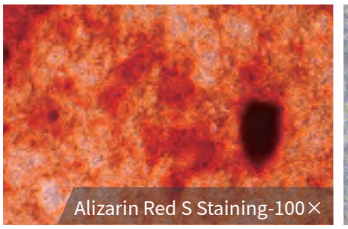
Human Bone Marrow MSCs (hBM-MSCs), hAD-MSCs, and hUC-MSCs showed robust adipogenic differentiation using Adipogenic Differentiation Media PD-016, PD-006, and PD-019, respectively, as confirmed by Oil Red O staining.

Osteogenic Differentiation Media

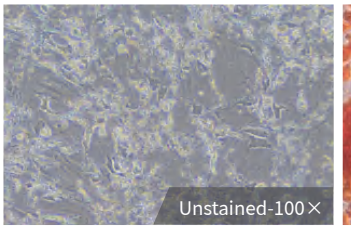
Cat. No.	Product Name
PD-008	Rat Bone Marrow Mesenchymal Stem Cells Osteogenic Differentiation Medium
PD-007	Human Adipose-derived Mesenchymal Stem Cells Osteogenic Differentiation Medium
PD-017	Human Umbilical Cord Mesenchymal Stem Cells Osteogenic Differentiation Medium
PD-033	MC3T3-E1 Subclone 14 Cells Osteogenic Differentiation Medium

For more osteogenic differentiation medium information, please visit www.procellsystem.com or contact local distributors.





P1 Rat Bone Marrow MSCs after 14 days of osteogenic induction



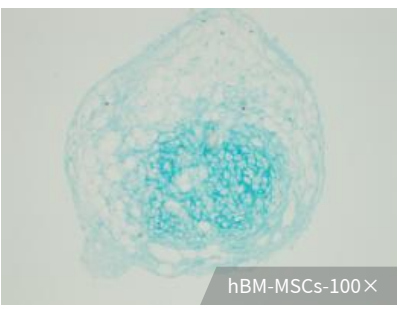
P5 Rat Bone Marrow MSCs after 14 days of osteogenic induction

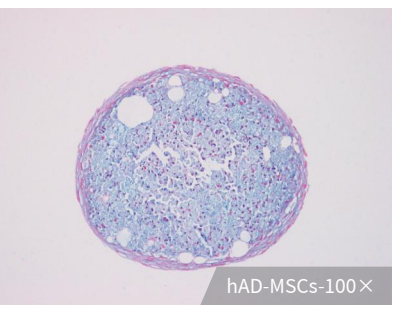
P1 Rat Bone Marrow MSCs formed mineralized nodules after 14 days of induction with Osteogenic Differentiation Medium PD-008, as confirmed by Alizarin Red staining; P5 BM-MSCs also formed mineralized nodules under the same conditions.

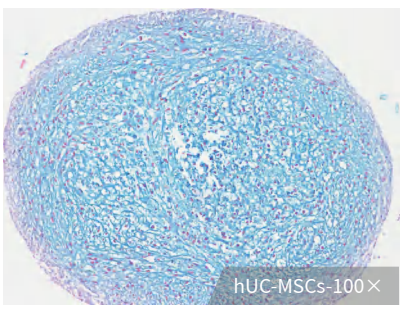
Chondrogenic Differentiation Media

Cat. No.	Product Name
PD-015	Human Bone Marrow Mesenchymal Stem Cells Chondrogenic Differentiation Medium
PD-020	Human Adipose-derived Mesenchymal Stem Cells Chondrogenic Differentiation Medium
PD-018	Human Umbilical Cord Mesenchymal Stem Cells Chondrogenic Differentiation Medium
PD-038	ATDC-5 Cells Chondrogenic Differentiation Medium

For more chondrogenic differentiation media information, please visit www.procellsystem.com or contact local distributors.







hBM-MSCs, hAD-MSCs, and hUC-MSCs showed robust chondrogenic differentiation using Chondrogenic Differentiation Media PD-015, PD-020, and PD-018, respectively, as confirmed by Alcian Blue staining.

Streamlined Isolation of High-Purity Exosomes

Procell offers optimized exosome isolation kits designed to deliver high purity and reliable yield for exosome research.

Key Features

- Versatile Methods: Available as magnetic beads, SEC, centrifugation columns, or by precipitation method.
- High Purity & Yield: Efficiently isolates intact exosomes with exceptional purity.
- No Specialized Equipment: Simple workflow, compatible with standard lab instruments.
- Broad Compatibility: Suitable for serum, plasma, and culture supernatants.

Cat. No.	Product Name
P-CA-501	Micro Exosome Isolation Kit
P-CA-502	Universal Exosome Isolation Kit-10 mL
P-CA-503	Universal Exosome Isolation Kit-30 mL
P-CA-504	Spin Column Exosome Isolation Kit
P-CA-505	Exosome Isolation Kit (Precipitation)
P-CA-506	Exosome Protector

Featured Citations

Product Name	Cat. No.	Citation Information
Human Mesenchymal Stem Cells (hMSCs) Serum-Free Medium	CM-SC01	Sun Y, Chen S, Qi X, et al. Engineered MEVs for photoreceptor-targeted delivery of USP25 to alleviate diabetic retinopathy. *Journal of Nanobiotechnology*. 2025; 23 (1): 575.
Mouse Bone Marrow Mesenchymal Stem Cell Complete Medium	CM-M131	Xiang W, Zhang T, Li B, et al. Senescent macrophages induce ferroptosis in skeletal muscle and accelerate osteoarthritis-related muscle atrophy. *Nature Aging*. 2025; 5 (7): 1295-1316.
Recombinant trypsin Solution, without phenol red	PB180240	Xu NW, Yang YH, Ding L, et al. Study on antitumor secondary metabolites from euphorbia ebracteolata hayata: structural characterization, network pharmacology, molecular docking and in vitro. *ACS Omega*. 2025 September 2; 10 (36): 41479-41491.
Mouse Bone Marrow Mesenchymal Stem Cells Adipogenic Differentiation Medium	PD-004	Lu, J, Wang, S, Wu, R, et al. An MMP-responsive isoquercitrin-loaded bilayer hydrogel promotes osteochondral defect repair via activation of the CXCL12/CXCR4–CDC42 axis. *Advanced Functional Materials*, 2025 (36).
Mouse Bone Marrow Mesenchymal Stem Cells Chondrogenic Differentiation Medium	PD-005	
Mouse Bone Marrow Mesenchymal Stem Cells Osteogenic Differentiation Medium	PD-003	
MC3T3-E1 Subclone 14 Cells Osteogenic Differentiation Medium	PD-033	Renxin Chen, Junwu Wang, Lei Chen, et al. Electrospunned nanofiber membranes of PTH-related peptide loaded biopolymers for osteoporotic bone defect repair. *Materials & Design*, Volume 244, 2024, 113179, ISSN 0264-1275.

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