

Technical Data Sheet:

iPSC-derived Mesenchymal Stem Cells; BYS0112

ATCC® Number	ACS-7010™
Organism	Homo sapiens, human
Tissue/Disease Source	Induced pluripotent stem cell (iPSC)-derived Mesenchymal Stem Cells
Product Description	Mesenchymal Stem Cells derived from ATCC® ACS-1026™ iPSCs
Application	Bone cell lineage differentiation, regenerative medicine, cell therapy, exosome research, cancer immunology, drug screening

Primary Cell Comparison

These differentiated cells provide high biological relevance as they exhibit the functionality of a primary cell type while being able to be generated in large cell numbers from a single clone, thus enabling the development of an unlimited source of biologically relevant cells needed for basic research or drug screening applications.

Immunosuppression Assay

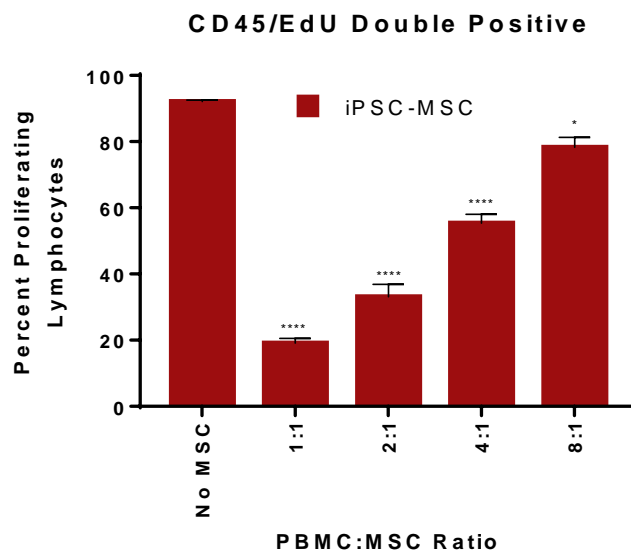


Figure 1. ACS-7010 MSC immunosuppress activated PBMC. MSC (ATCC® ACS-7010™) were seeded at 20,000 cells/cm² and cultured in MSC medium to become ~90% confluent, then treated with mitomycin for 2 hours, harvested, and counted. CD3/CD28 activated Primary Peripheral Blood Mononuclear Cells (PBMC, ATCC® PCS-800-011™) were then co-culture with the growth-arrested MSC for 4 days at the indicated MSC:PBMC ratio. T-cell proliferation was measured following an 18-hour incubation of 5-ethynyl-2'-deoxyuridine (EdU) with the co-cultured cells followed by flow cytometry with APC-conjugated anti-CD45 and FITC-conjugated anti-EdU antibodies using Click-iT Plus EdU Flow Cytometry Assay Kit (Life Technology cat# C10633).

Differentiation Potential

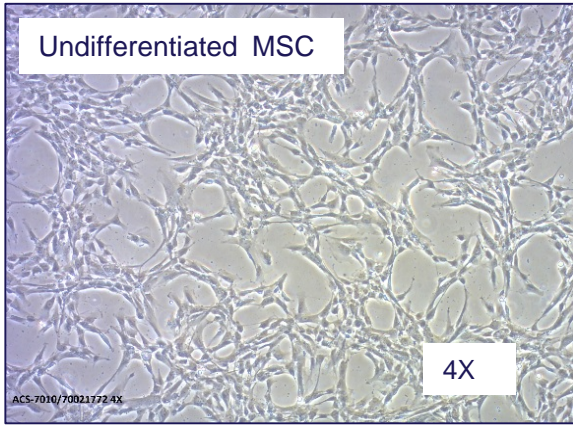


Image A: Day 0

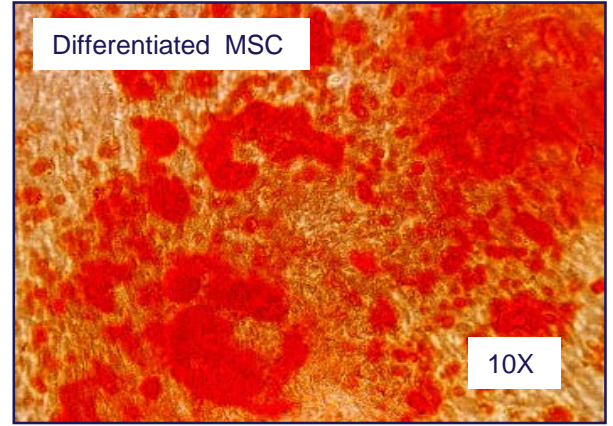


Image B: Day 37

Figure 2. ACS-7010 MSC have a potency to differentiate into osteocytes. MSC (ATCC® ACS-7010™) were differentiated into osteocytes using Osteocyte Differentiation Tool (ATCC® PCS-500-052™ or equivalent) for 37 days and stained using Alizarin Red. Undifferentiated MSCs are shown in image A and differentiated and stained cells are shown in image B.

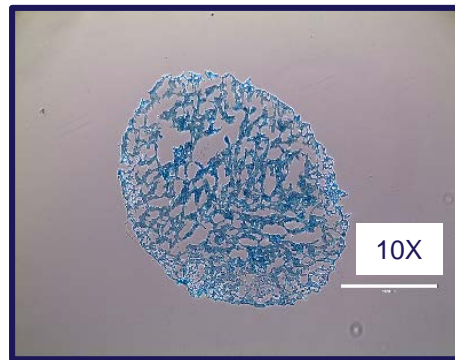


Figure 3. ACS-7010 MSC have a potency to differentiate into chondrocytes. MSC (ATCC® ACS-7010™) were differentiated to chondrocytes in 3D using Chondrocyte Differentiation Tool (ATCC® PCS-500-051™ or equivalent) for 21 days, fixed, sectioned and stained using Alcian blue stain.

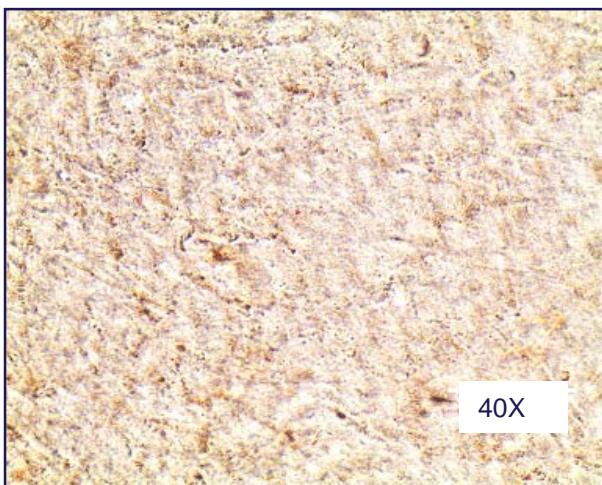


Image A: Day 21 Undifferentiated MSC

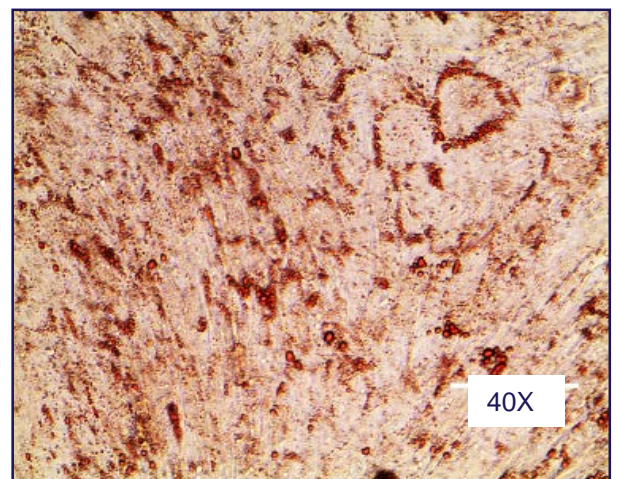


Image B: Day 21 Differentiated MSC

Figure 4. ACS-7010 MSC have a potency to differentiate to Adipocytes. MSC (ATCC® ACS-7010™) were differentiated to adipocytes using AdipoLife Differentiation Kit (Basal Medium: LM-0021 with DifFactor 3: LS-1083 or equivalent) for 21 days and stained using Oil O Red stain. Undifferentiated MSCs are shown in image A and differentiated and stained cells are shown in image B.

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