SANTA CRUZ BIOTECHNOLOGY, INC.

STRO-1 (STRO-1): sc-47733

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

STRO-1 is a monoclonal IgM derived from mice immunized with human CD34$^+$ bone marrow cells. STRO-1 is a valuable reagent in bone marrow, dental pulp and blood tissue samples for enriching subsets of marrow stromal (mesenchymal, MSCs) cells through recognition of a surface antigen unique to this lineage. MSCs have the capability for renewal and differentiation into various lineages of mesenchymal tissues. These features of MSCs attract a lot of attention from investigators in the context of cell-based therapies of several human diseases. From bone marrow cells, the frequency of fibroblast colony-forming cells (CFU-F) is enriched approximately 100-fold in a STRO-1$^+$/glycophorin A$^-$ population relative to STRO-1$^+$/glycophorin A$^+$ population. STRO-1$^+$ enriched subset of marrow cells can differentiate into mesenchymal lineages including hematopoiesis-supportive stromal cells with a vascular smooth muscle-like phenotype, adipocytes, osteoblasts and chondrocytes.

REFERENCES

1. Simmons, P.J., et al. 1994. Isolation, characterization and functional activity of human marrow stromal progenitors in hemopoiesis. Prog. Clin. Biol. Res. 389: 271-280.
2. Byers, R.J., et al. 1999. Osteoblastic differentiation and mRNA analysis of STRO-1-positive human bone marrow stromal cells using primary *in vitro* culture and poly (A) PCR. J. Pathol. 187: 374-381.

SOURCE

STRO-1 (STRO-1) is a mouse monoclonal antibody raised against CD34$^+$ bone marrow cells of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STRO-1 (STRO-1) is available conjugated to agarose (sc-47733 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-47733 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-47733 PE), fluorescein (sc-47733 FITC), Alexa Fluor® 488 (sc-47733 AF488) or Alexa Fluor® 647 (sc-47733 AF647), 200 µg/ml, for IF, IHC(P) and FCM.

In addition, STRO-1 (STRO-1) is available conjugated to PerCP-Cy5.5 (sc-47733 PCPC5), 100 tests in 2 ml, for IF, IHC(P) and FCM.

APPLICATIONS

STRO-1 (STRO-1) is recommended for detection of STRO-1 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells); may cross-react with murine bone marrow-derived stromal progenitors.

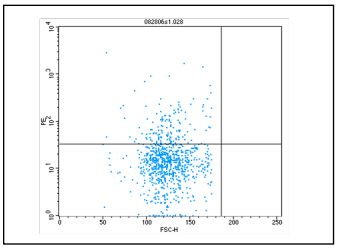
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



STRO-1 (STRO-1) PE: sc-47733 PE. FCM analysis of Glycophorin A negative human bone marrow cells. Quadrant markers were set based on the isotype control, normal mouse IgM: sc-2870. Kindly provided by Beverly Torok-Storb at Fred Hutchinson Cancer Research Center.

SELECT PRODUCT CITATIONS

1. Medici, D., et al. 2010. Conversion of vascular endothelial cells into multipotent stem-like cells. Nat. Med. 16: 1400-1406.
2. Klein, D., et al. 2011. Vascular wall-resident CD44$^+$ multipotent stem cells give rise to pericytes and smooth muscle cells and contribute to new vessel maturation. PLoS ONE 6: e20540.
3. Wang, J., et al. 2012. Effects of Wnt/β-catenin signalling on proliferation and differentiation of apical papilla stem cells. Cell Prolif. 45: 121-131.
4. Manfrini, M., et al. 2013. Mesenchymal stem cells from patients to assay bone graft substitutes. J. Cell. Physiol. 228: 1229-1237.
5. Favaron, P.O., et al. 2014. Yolk sac mesenchymal progenitor cells from New World mice *(Necromys lasiurus)* with multipotent differential potential. PLoS ONE 9: e95575.
6. Choi, J.K., et al. 2015. The efficiency of the *in vitro* osteo/dentinogenic differentiation of human dental pulp cells, periodontal ligament cells and gingival fibroblasts. Int. J. Mol. Med. 35: 161-168.
7. Mario, L.C., et al. 2016. Egg and fourth instar larvae gut of *Aedes aegypti* as a source of stem cells. Tissue Cell 48: 558-565.
8. Kohara, Y., et al. 2016. Distribution of type VI collagen in association with osteoblast lineages in the groove of Ranvier during rat postnatal development. Ann. Anat. 208: 58-68.
9. Santos, A.C., et al. 2017. Cochlear epithelial of dog fetuses: a new source of multipotent stem cells. Cytotechnology 69: 179-189.
10. Borghesi, J., et al. 2017. Phenotype and multipotency of rabbit *(Oryctolagus cuniculus)* amniotic stem cells. Stem Cell Res. Ther. 8: 27.

RESEARCH USE

For research use only, not for use in diagnostic procedures.