SANTA CRUZ BIOTECHNOLOGY, INC.

M-CSF (H-300): sc-13103

BACKGROUND

The macrophage colony-stimulating factor (M-CSF), also designated CSF-1, was originally discovered in serum, urine and other biological fluids as a factor that can stimulate the formation of macrophage colonies from bone marrow hematopoietic progenitor cells. M-CSF is a homodimeric cytokine that is produced by fibroblasts, epithelial cells, bone marrow stromal cells, osteoblasts, keratinocytes, macrophages, T cells and B cells. M-CSF is a glycoprotein required for the proliferation and differentiation of mononuclear phagocytes, including osteoclasts. M-CSF has also been identified as an important mediator of the inflammatory response and can regulate the release of proinflammatory cytokines from macrophages. M-CSF exerts its pleiotropic effects by binding to a single type of high affinity cell surface receptor that is encoded by the c-Fms proto-oncogene.

REFERENCES

1. Stanley, E.R., et al. 1977. Factors regulating macrophage production and growth. Purification and some properties of the colony stimulating factor from medium conditioned by mouse L cells. J. Biol. Chem. 252: 4305-4312.
2. Das, S.K., et al. 1981. Human colony-stimulating factor (CSF-1) radioimmunoassay: resolution of three subclasses of human colony-stimulating factors. Blood 58: 630-641.
3. Wong, G.G., et al. 1987. Human CSF-1: molecular cloning and expression of 4 kb cDNA encoding the human urinary protein. Science 235: 1504-1508.
4. Pollard, J.W., et al. 1987. Apparent role of the macrophage growth factor, CSF-1, in placental development. Nature 330: 484-486.
5. Arceci, R.J., et al. 1989. Temporal expression and location of colony-stimulating factor 1 (CSF-1) and its receptor in the female reproductive tract are consistent with CSF-1-regulated placental development. Proc. Natl. Acad. Sci. USA 86: 8818-8822.
6. Kato, J., et al. 1990. Human colony-stimulating factor 1 (CSF-1) receptor confers CSF-1 responsiveness to interleukin-3-dependent 32DC13 mouse myeloid cells and abrogates differentiation in response to granulocyte CSF. Blood 75: 1780-1787.
7. Roth, P., et al. 1992. The biology of CSF-1 and its receptor. Curr. Top. Microbiol. Immunol. 181: 141-167.
8. Taylor, E.W., et al. 1994. Structure-function studies on recombinant human macrophage colony-stimulating factor (M-CSF). J. Biol. Chem. 269: 31171-31177.

CHROMOSOMAL LOCATION

Genetic locus: CSF1 (human) mapping to 1p13.3; Csf1 (mouse) mapping to 3 F2.3.

SOURCE

M-CSF (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping near the N-terminus of M-CSF of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

M-CSF (H-300) is recommended for detection of M-CSF of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for M-CSF siRNA (h): sc-39393, M-CSF siRNA (m): sc-39394, M-CSF shRNA Plasmid (h): sc-39393-SH, M-CSF shRNA Plasmid (m): sc-39394-SH, M-CSF shRNA (h) Lentiviral Particles: sc-39393-V and M-CSF shRNA (m) Lentiviral Particles: sc-39394-V.

Molecular Weight of M-CSF: 18.5 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Zou, W., et al. 2002. CpG oligonucleotides: novel regulators of osteoclast differentiation. FASEB J. 16: 274-282.
2. Kasakabe, K., et al. 2007. Effect of danazol on NK cells and cytokines in the mouse uterus. J. Reprod. Dev. 53: 87-94.
3. Al-Shibli, K., et al. 2009. The prognostic value of intraepithelial and stromal innate immune system cells in non-small cell lung carcinoma. Histopathology 55: 301-312.
4. Deng, Y.Y., et al. 2010. Microglia-derived macrophage colony stimulating factor promotes generation of proinflammatory cytokines by astrocytes in the periventricular white matter in the hypoxic neonatal brain. Brain Pathol. 20: 909-925.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.