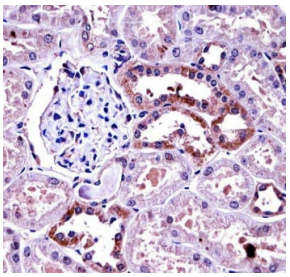
M-CSF Antibody / Macrophage Colony Stimulating Factor 1 / CSF1 (F54882)

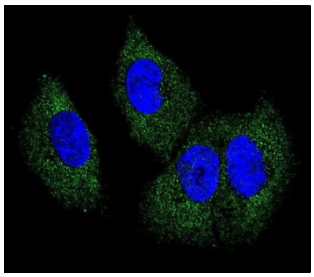
Catalog No.	Formulation	Size
F54882-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54882-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

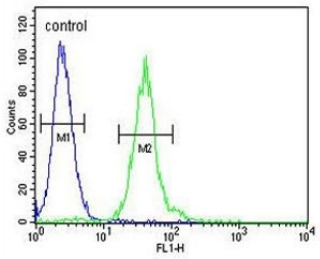
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Purified
UniProt	P09603
Localization	Cytoplasmic, membrane
Applications	Western Blot : 1:500-1:1000 Immunohistochemistry (FFPE) : 1:10-1:50 Immunofluorescence : 1:10-1:50 Flow Cytometry : 1:10-1:50 (1x10e6 cells)
Limitations	This M-CSF antibody is available for research use only.



Immunohistochemistry of M-CSF antibody in human kidney tissue. FFPE human kidney was subjected to heat-induced epitope retrieval by steaming sections in pH 6 citrate buffer for 20 minutes followed by cooling prior to staining. M-CSF antibody demonstrates cytoplasmic HRP-DAB brown staining predominantly in renal tubular epithelial cells, with minimal staining in glomerular structures. The staining pattern is consistent with localized expression of Macrophage colony stimulating factor within tubular epithelium.



Immunofluorescence of M-CSF antibody in human MDA-MB-231 cells. Cells were stained with M-CSF antibody (green) and counterstained with DAPI (blue) to visualize nuclei. Fluorescent signal demonstrates predominantly cytoplasmic distribution with a diffuse and punctate pattern surrounding the DAPI-positive nuclei, consistent with intracellular localization of Macrophage colony stimulating factor within tumor-derived epithelial cells.



Flow cytometry testing of human HEK293 cells with M-CSF antibody; Blue=isotype control, Green= M-CSF antibody.

Description

M-CSF antibody recognizes Macrophage colony stimulating factor, a secreted cytokine encoded by the CSF1 gene and formally known as Colony stimulating factor 1. M-CSF antibody, also referred to as CSF1 antibody and Colony stimulating factor 1 antibody in the literature, detects a key regulator of monocyte and macrophage lineage development. This glycoprotein is synthesized as a precursor that undergoes dimerization and proteolytic processing to generate soluble and membrane-associated isoforms. It is secreted by fibroblasts, endothelial cells, osteoblasts, stromal cells, and various epithelial and tumor cells, particularly within inflammatory environments and the tumor microenvironment.

Macrophage colony stimulating factor plays a central role in hematopoiesis by promoting survival, proliferation, and differentiation of monocyte progenitors into mature macrophages and osteoclasts. Upon binding to its receptor CSF1R, a receptor tyrosine kinase expressed on myeloid lineage cells, ligand engagement induces receptor dimerization and autophosphorylation. This activates downstream signaling pathways including PI3K-AKT, MAPK, and JAK-STAT cascades that regulate cell survival, cytoskeletal remodeling, and transcriptional programs associated with macrophage polarization. Through these pathways, M-CSF coordinates tissue specific macrophage development and immune homeostasis.

The CSF1 gene is located on chromosome 1p13 and produces multiple isoforms through alternative splicing and differential cleavage. Some isoforms remain membrane bound, allowing localized signaling, while others are secreted and act in a paracrine or endocrine manner. In bone, Macrophage colony stimulating factor is essential for osteoclast differentiation and skeletal remodeling. In tissues such as liver, lung, spleen, and skin, it supports maintenance of resident macrophage populations. During embryonic and postnatal development, CSF1 signaling contributes to the establishment and expansion of tissue resident macrophages.

Dysregulated expression of Macrophage colony stimulating factor has been implicated in chronic inflammatory disorders, autoimmune diseases, and cancer. Elevated M-CSF levels are commonly observed in breast, ovarian, and pancreatic carcinomas, where increased CSF1 signaling promotes recruitment and survival of tumor associated macrophages. These macrophages can enhance angiogenesis, extracellular matrix remodeling, and immune suppression, thereby supporting tumor progression. As a result, the CSF1 CSF1R signaling axis has emerged as a therapeutic target in oncology and inflammatory disease research.

Structurally, Macrophage colony stimulating factor belongs to the four helix bundle cytokine family and functions as a homodimer. Glycosylation and other post-translational modifications influence stability, secretion, and receptor binding dynamics. An M-CSF antibody is suitable for research applications investigating myeloid differentiation, macrophage biology, inflammatory signaling, and tumor microenvironment interactions.

Application Notes

The stated application concentrations are suggested starting points. Titration of the M-CSF antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 230-257 from the human protein was used as the immunogen for the M-CSF antibody.

Storage

Aliquot the M-CSF antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.