Human CSF1R / MCSF Receptor / CD115 Protein (His & Fc Tag)

Catalog Number: 10161-H03H

Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

C-FMS; CD115; CSF-1R; CSFR; FIM2; FMS; HDLS; M-CSF-R; MCSF Receptor; AI323359; CD115; CSF-1R; Csfmr; Fim-2; Fms; M-CSF-R; M-CSFR

Protein Construction:

A DNA sequence encoding the extracellular domain (Met 1-Glu512) of human M-CSFR (NP_005202.2) precursor was expressed with the fused C-terminal polyhistide-tagged Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

1. Measured by its ability to bind biotinylated Human CSF1-his in functional ELISA. 2. Measured by its ability to inhibit the human CSF-induced proliferation of M?NFS?60 mouse myelogenous leukemia lymphoblast cells. The ED_{50} for this effect is typically 0.1-0.6 μg/mL in the presence of 3 ng/ml Recombinant Human M-CSF.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Ile 20

Molecular Mass:

The recombinant human M-CSFR/Fc chimera is a disulfide-linked homodimer protein. The monomeric subunit contains 737 amino acids after the removal of signal peptide with a calculated molecular mass of 82.4 kDa. As a result of glycosylation, the monomer migrates as an approximately 115-125 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

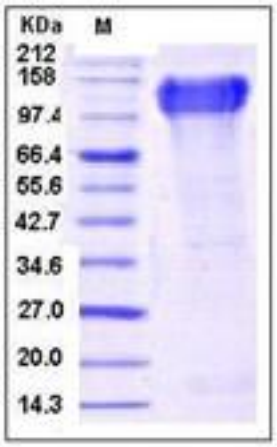
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

M-CSFR encoded by the proto-oncogene c-fms is the receptor for colony stimulating factor 1 (CSF1R), a cytokine involved in the proliferation, differentiation, and activation of macrophages. This cell surface glycoprotein is consisted by an extracellular ligand-binding domain, a single membrane-spanning segment, and an intracellular tyrosine kinase domain. Binding of CSF1 activates the receptor kinase, leading to "autophosphorylation" of receptor subunits and the concomitant phosphorylation of a series of cellular proteins on tyrosine residues. CSF1R is a tyrosine kinase receptor that is absolutely required for macrophage differentiation and thus occupies a central role in hematopoiesis. CSF1 and its receptor (CSF1R, product of c-fms proto-oncogene) were initially implicated as essential for normal monocyte development as well as for trophoblastic implantation. This apparent role for CSF1/CSF1R in normal mammary gland development is very intriguing because this receptor/ligand pair has also been found to be important in the biology of breast cancer in which abnormal expression of CSF1 and its receptor correlates with tumor cell invasiveness and adverse clinical prognosis. Tumor cell expression of CSF1R is under the control of several steroid hormones (glucocorticoids and progestins) and the binding of several bHLH transcription factors, while tumor cell expression of CSF-1 appears to be regulated by other hormones, some of which are involved in normal lactogenic differentiation. However, studies have demonstrated that CSF1 and CSF1R have additional roles in mammary gland development during pregnancy and lactation. The role of CSF1 and CSF1R in normal and neoplastic mammary development that may elucidate potential relationships of growth factor-induced biological changes in the breast during pregnancy and tumor progression.

References

1.Sherr CJ. (1990) The colony-stimulating factor 1 receptor: pleiotropy of signal-response coupling. Lymphokine Res. 9(4): 543-8.
2.Kacinski BM. (1997) CSF-1 and its receptor in breast carcinomas and neoplasms of the female reproductive tract. Mol Reprod Dev. 46(1): 71-4.
3.Sapi E, *et al.* (1999) The role of CSF-1 in normal and neoplastic breast physiology. Proc Soc Exp Biol Med. 220(1): 1-8.