

Recombinant Rat CSF1R Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52439

Size: 10ug, 100ug

Protein Name: Macrophage colony-stimulating factor 1 receptor (CSF-1 receptor) (CSF-1-R) (CSF-1R) (M-CSF-R) (EC 2.7.10.1) (Proto-oncogene c-Fms) (CD antigen CD115)

Synonym: Csf1r, Csfmr, Fms

UniProt ID: Q00495

UniProt Link: www.uniprot.org/uniprotkb/Q00495/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 978 AA

Molecular Weight: 109 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MELGPPLVLLLATVWHGQGAPVIEPSGPELVVEPGETVTLRCVSNNGSVEWDGPISPYWTLDPESPG
STLTTRNATFKNTGTYRCTELEDPMAGSTTIHLYVKDPAHSWNLLAQEVTVVEGQEAVLPCLITDPAL
KDSVSLMREGGRQVLRKTVYFFSAWRGFIIRKAKVLDSNTYVCKTMVNGRESTSTGIWLKVN RVHP
EPPQIKLEPSKLVIRGEAAQIVCSATNAEVGFNVILKRGDTKLEIPLNSDFQDNYYKKVRALSLNAVD
FQDAGIYSCVASNDVGTRTATMNFQVVESAYLNLTSEQSLLQEVSVGDSLILTVHADAYPSIQHYNW
TYLGPF FEDQRKLEFITQRAIYRYTFKLFLNRVKASEAGQYFLMAQNKAGWNNLTFELTLRYPPEVSV
TWMPVNGSDVLFCDVSGYPQPSVTWMECRGHTDRCD E A QALQVWNDTHPEVLSQKPFDKVIIQS
QLPIGTLKHNMTYFCKTHNSVGNSSQYFRAVSLGQSKQLPDESLFTPVVVACMSVMSLLVLLLLLLLY
KYKQKPKYQVRWKIIRYEGNSYTFIDPTQLPYNEKWEFPRNNLQFGKTLGAGAFGKVVEATAFGLG
KEDAVLKVAVKMLKSTAHAD E KEALMSELKIMSHLGQHENIVNLLGACTHGGPVLVITEYCCYGDLLN
FLRRKAEAMLGPSLSPGQDSEGDSSYKNIHLEKKYVRD SGFSSQGVD TYVEMRPVSTSSSDSFFK
QDL DKEPSRPLELWDL LHFSSQVAQGM A FLASKNCIHRDVAARNVLLTSGHVAKIGDFGLARDIMND
SNYVVKGNARLPVKWMAPE S ILYCVYTVQSDVWSYGILLWEIFSLGLNPYPGILVNNKFYKLVKDGY
QMAQPVFAPKNIYSIMQSCWDLEPTRRPTFQQICFLLQE QARLERRDQDYANLPSSGGSSGSDSGG
GSSGGSSEPEEESSSEHLACCEPGDIAQPLLQPNNYQFAC

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Macrophage colony-stimulating factor 1 receptor (CSF-1 receptor) (CSF-1-R) (CSF-1R) (M-CSF-R) (EC 2.7.10.1) (Proto-oncogene c-Fms) (CD antigen CD115) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Tyrosine-protein kinase that acts as a cell-surface receptor for CSF1 and IL34 and plays an essential role in the regulation of survival, proliferation and differentiation of hematopoietic precursor cells, especially mononuclear phagocytes, such as macrophages and monocytes. Promotes the release of pro-inflammatory chemokines in response to IL34 and CSF1, and thereby plays an important role in innate immunity and in inflammatory processes. Plays an important role in the regulation of osteoclast proliferation and differentiation, the regulation of bone resorption, and is required for normal bone and tooth development. Required for normal male and female fertility, and for normal development of milk ducts and acinar structures in the mammary gland during pregnancy. Promotes reorganization of the actin cytoskeleton, regulates formation of membrane ruffles, cell adhesion and cell migration, and promotes cancer cell invasion. Activates several signaling pathways in response to ligand binding, including the ERK1/2 and the JNK pathway (By similarity). Phosphorylates PIK3R1, PLCG2, GRB2, SLA2 and CBL. Activation of PLCG2 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate, that then lead to the activation of protein kinase C family members, especially PRKCD. Phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, leads to activation of the AKT1 signaling pathway. Activated CSF1R also mediates activation of the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1, and of the SRC family kinases SRC, FYN and YES1. Activated CSF1R transmits signals both via proteins that directly interact with phosphorylated tyrosine residues in its intracellular domain, or via adapter proteins, such as GRB2. Promotes activation of STAT family members STAT3, STAT5A and/or STAT5B. Promotes tyrosine phosphorylation of SHC1 and INPP5D/SHIP-1. Receptor signaling is down-regulated by protein phosphatases, such as INPP5D/SHIP-1, that dephosphorylate the receptor and its downstream effectors, and by rapid internalization of the activated receptor (By similarity). In the central nervous system, may play a role in the development of microglia macrophages (By similarity).

Subcellular Localization: Cell membrane; Single-pass type I membrane protein. Note=The autophosphorylated receptor is ubiquitinated and internalized, leading to its degradation.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial

manufacturing.