CSF1R Protein, Mouse (HEK293, His)

Cat. No.:	HY-P72952
Synonyms:	Macrophage colony-stimulating factor 1 receptor; CSF-1R; M-CSF-R; CD115; CSF1R; FMS
Species:	Mouse
Source:	HEK293
Accession:	P09581 (A20-S511)
Gene ID:	12978
Molecular Weight:	Approximately 80-90 kDa, due to glycosylation.

PROPERTIES

AA Sequence	A P V I E P S G P E L V V E P G E T V T L R C V S N G S V E W D G P I S P Y W T L D P E S P G S T L T T R N A T F K N T G T Y R C T E L E D P M A G S T T I H L Y V K D P A H S W N L L A Q E V T V V E G Q E A V L P C L I T D P A L K D S V S L M R E G G R Q V L R K T V Y F F S P W R G F I I R K A K V L D S N T Y V C K T M V N G R E S T S T G I W L K V N R V H P E P P Q I K L E P S K L V R I R G E A A Q I V C S A T N A E V G F N V I L K R G D T K L E I P L N S D F Q D N Y Y K K V R A L S L N A V D F Q D A G I Y S C V A S N D V G T R T A T M N F Q V V E S A Y L N L T S E Q S L L Q E V S V G D S L I L T V H A D A Y P S I Q H Y N W T Y L G P F F E D Q R K L E F I T Q R A I Y R Y T F K L F L N R V K A S E A G Q Y F L M A Q N K A G W N N L T F E L T L R Y P P E V S V T W M P V N G S D V L F C D V S G Y P Q P S V T W M E C R G H T D R C D E A Q A L Q V W N D T H P E V L S Q K P F D K V I I Q S Q L P I G T L K H N M T Y F C K T H N S V G N S S Q Y F R A V S L G Q S K Q L P D E S
Biological Activity	Measured by its ability to inhibit the M-CSF-induced proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells. The ED_{50} for this effect is 0.4080 μg/mL in the presence of 10 ng/mL mouse M-CSF. Corresponding to a specific activity is 2.451×10^3 units/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	CSF1R protein, a tyrosine-protein kinase, serves as a cell-surface receptor for CSF1 and IL34, exerting pivotal control over the survival, proliferation, and differentiation of hematopoietic precursor cells, particularly mononuclear phagocytes like macrophages and monocytes. Its role in innate immunity and inflammatory processes is underscored by its promotion of the release of pro-inflammatory chemokines in response to IL34 and CSF1. Additionally, CSF1R plays a critical role in the regulation of osteoclast proliferation and differentiation, bone resorption, and is indispensable for normal bone and tooth development. It is essential for normal fertility in both males and females, as well as for the development of milk ducts and acinar structures in the mammary gland during pregnancy. Notably, CSF1R influences the reorganization of the actin cytoskeleton, regulates the formation of membrane ruffles, cell adhesion, cell migration, and facilitates cancer cell invasion. Upon ligand binding, CSF1R activates multiple signaling pathways, including ERK1/2, JNK, PI3K/AKT, MAP kinases (MAPK1/ERK2 and/or MAPK3/ERK1), and SRC family kinases (SRC, FYN, YES1). Its downstream effects involve the phosphorylation of various target proteins, such as PIK3R1, PLCG2, GRB2, SLA2, and CBL. Furthermore, CSF1R mediates the activation of STAT family members (STAT3, STAT5A, and/or STAT5B) and promotes tyrosine phosphorylation of SHC1 and INPP5D/SHIP-1. The receptor signaling is tightly regulated by protein phosphatases, including INPP5D/SHIP-1, and by the rapid internalization of the activated receptor. In the central nervous system, CSF1R may contribute to the development of microglia macrophages.

Caution: Product has not been fully validated for medical applications. For research use only.

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