ARG70287
Human CSF1R recombinant protein (Active) (ECD) (His-tagged, C-ter)

Package: 100 µg
Store at: -20°C

Summary

Product Description	HEK293 expressed, His-tagged (C-ter) Active Human CSF1R recombinant protein (ECD).
Tested Reactivity	Hu
Tested Application	Binding, FuncSt, SDS-PAGE
Target Name	CSF1R (ECD)
Species	Human
A.A. Sequence	Ile20 - Glu512 of Human CSF1R (NP_005202.2) with 6X His tag at the C-terminus.
Expression System	HEK293
Activity	Active
Activity Note	Measured by its ability to inhibit the GCSF-induced proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells. The ED50 for this ettect is typically 0.095-0.38 ng/ml.
Alternate Names	CSF-1 receptor; CSF-1-R; FIM2; Macrophage colony-stimulating factor 1 receptor; Proto-oncogene c-Fms; CD115; CD antigen CD115; M-CSF-R; FMS; CSFR; C-FMS; EC 2.7.10.1; CSF-1R; HDLS

Application Instructions

Application Note	Binding activity test: Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human M-CSF at 2µg/ml (100 µl/well) can bind Recombinant Human CSF1R with a linear range of 50-200 ng/ml.

Properties

Form	Powder
Purification Note	0.22 µm filter sterilized. Endotoxin level is 95% (by SDS-PAGE)
Buffer	PBS (pH 7.4)
Reconstitution	Reconstitute to a concentration of 0.1 - 0.5 mg/ml in sterile distilled water.
Storage instruction	For long term, lyophilized protein should be stored at -20°C or -80°C. After reconstitution, aliquot and store at -20°C for up to one month, at 2-8°C for up to one week. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening.
Note	For laboratory research only, not for drug, diagnostic or other use.

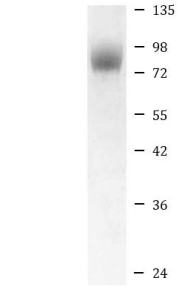
Bioinformation

Gene Symbol	CSF1R
Gene Full Name	colony stimulating factor 1 receptor
Background	The protein encoded by this gene is the receptor for colony stimulating factor 1, a cytokine which controls the production, differentiation, and function of macrophages. This receptor mediates most if not all of the biological effects of this cytokine. Ligand binding activates the receptor kinase through a

process of oligomerization and transphosphorylation. The encoded protein is a tyrosine kinase transmembrane receptor and member of the CSF1/PDGF receptor family of tyrosine-protein kinases. Mutations in this gene have been associated with a predisposition to myeloid malignancy. The first intron of this gene contains a transcriptionally inactive ribosomal protein L7 processed pseudogene oriented in the opposite direction. Alternative splicing results in multiple transcript variants. Expression of a splice variant from an LTR promoter has been found in Hodgkin lymphoma (HL), HL cell lines and anaplastic large cell lymphoma. [provided by RefSeq, Mar 2017]

Function	Tyrosine-protein kinase that acts as 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 proinflammatory 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. 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. [UniProt]
Calculated Mw	108 kDa
PTM	Autophosphorylated in response to CSF1 or IL34 binding. Phosphorylation at Tyr-561 is important for normal down-regulation of signaling by ubiquitination, internalization and degradation. Phosphorylation at Tyr-561 and Tyr-809 is important for interaction with SRC family members, including FYN, YES1 and SRC, and for subsequent activation of these protein kinases. Phosphorylation at Tyr-699 and Tyr-923 is important for interaction with GRB2. Phosphorylation at Tyr-723 is important for interaction with PIK3R1. Phosphorylation at Tyr-708 is important for normal receptor degradation. Phosphorylation at Tyr-723 and Tyr-809 is important for interaction with PLCG2. Phosphorylation at Tyr-969 is important for interaction with CBL. Dephosphorylation by PTPN2 negatively regulates downstream signaling and macrophage differentiation. Ubiquitinated. Becomes rapidly polyubiquitinated after autophosphorylation, leading to its degradation. [UniProt]
Cellular Localization	Cell membrane; Single-pass type I membrane protein. [UniProt]

Images



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ARG70287 Human CSF1R recombinant protein (Active) (ECD) (His-tagged, C-ter) SDS-PAGE image

SDS-PAGE analysis of ARG70287 Human CSF1R recombinant protein (Active) (ECD) (His-tagged, C-ter).