PRODUCT INFORMATION

CSF-1R/CD115 (human, recombinant)

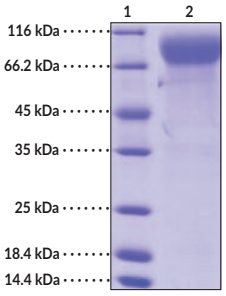
Item No. 44181

Overview and Properties

Synonyms:	c-Fms, FIM2, FMS, HDLS, Macrophage Colony-stimulating Factor 1 Receptor, McDonough Feline Sarcoma Viral Oncogene Homolog, MCSF-1 Receptor
Source:	Active recombinant human CSF-1R expressed in HEK293 cells
Amino Acids:	20-512
Uniprot No.:	P07333
Molecular Weight:	54.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Protein Concentration:	***batch specific*** mg/ml

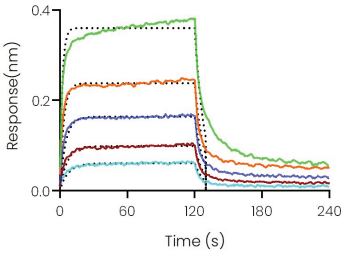
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

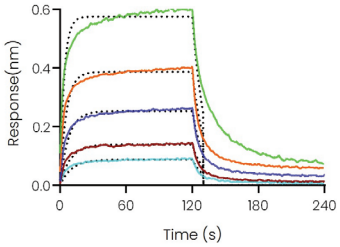


Lane 1: MW Markers
Lane 2: CSF-1R/CD115

SDS-PAGE Analysis of CSF-1R/CD115. This protein has a calculated molecular weight of 54.5 kDa.



Dimerization ability of CSF-1R/CD115 in a bio-layer interferometry (BLI) assay. CSF-1R/CD115 was immobilized on a SA Biosensor via amine coupling and biotinylation. Using BLI, the affinity constant (Kd) of CSF-1R/CD115 bound to CSF-1R/CD115 was 0.323 µM.



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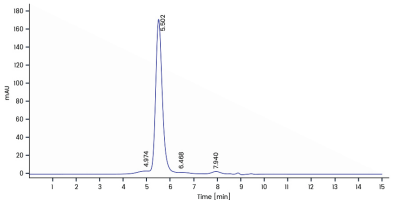

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Description

Colony-stimulating factor 1 receptor (CSF-1R), also known as CD115, is a single-pass transmembrane protein encoded by *CSF1R*, previously known as the c-*fms* proto-oncogene, in humans.[1] It is composed of a glycosylated extracellular domain containing ligand-binding and dimerization regions, a transmembrane domain, and an intracellular tyrosine kinase domain. CSF-1R is expressed in monocytes, macrophages, osteoclasts, and microglia, among other cell types.[2] Upon binding by CSF-1R or IL-34, CSF-1R dimerizes and is autophosphorylated leading to ERK1/2, AMPK, Src/FAK, or Akt signaling.[3,4] In this way, CSF-1R is involved in a wide variety of processes, including osteoclast cytoskeletal remodeling, macrophage motility, proliferation, and survival, and microglial proliferation.[2-4] Increased intratumoral expression of *CSF1R* is associated with multiple cancer types and is predictive of poor prognosis in hematological cancers.[1] Cayman's CSF-1R/CD115 (human, recombinant) protein can be used for binding assays. This protein consists of 493 amino acids and has a calculated molecular weight of 54.5 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 100 kDa due to glycosylation.

References

1. Yeung, Y.-G. and Stanley, E.R. Proteomic approaches to the analysis of early events in colony-stimulating factor-1 signal transduction. *Mol. Cell Proteomics* **2(11)**, 1143-1155 (2003).
2. Mun, S.H., Park, P.S.U., and Park-Min, K.-H. The M-CSF receptor in osteoclasts and beyond. *Exp. Mol. Med.* **52(8)**, 1239-1254 (2020).
3. Pixley, F.J. and Stanley, E.R. CSF-1 regulation of the wandering macrophage: complexity in action. *Trends Cell Biol.* **14(11)**, 628-638 (2004).
4. Freuchet, A., Salama, A., Remy, S., *et al*. IL-34 and CSF-1, deciphering similarities and differences at steady state and in diseases. *J. Leukoc. Biol.* **110(4)**, 771-796 (2021).
5. Mo, H., Hao, Y., Lv, Y., *et al*. Overexpression of macrophage-colony stimulating factor-1 receptor as a prognostic factor for survival in cancer: A systematic review and meta-analysis. *Medicine (Baltimore)* **100(12)**, e25218 (2021).

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