



# Recombinant Protein Technical Manual

**Recombinant Rat CSF1R/CD115 Protein (Fc Tag)(Active)**  
RPES4161

## Product Data:

**Product SKU:** RPES4161

**Size:** 50µg

**Species:** Rat

**Expression host:** HEK293 Cells

**Uniprot:** D4ACA7

## Protein Information:

**Molecular Mass:** 82 kDa

**AP Molecular Mass:** 10616 kDa

**Tag:** C-Fc

**Bio-activity:** 1. Immobilized rat CSF1R-Fc at 10 µg/ml (100 µl/well) can bind biotinylated human CSF1-His, The EC50 of biotinylated human CSF1-His is 1.7-3.9 ng/ml. 2. Measured by its ability to inhibit mouse CSF induced proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells. The ED50 for this effect is typically 0.015-0.06 µg/mL in the presence of 2.5 ng/ml Recombinant Mouse M-CSF.

**Purity:** > 95 % as determined by SDS-PAGE

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

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile PBS, pH 7.4

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:** Functional ELISA

**Synonyms:** CSF1R;MCSF Receptor

## Immunogen Information:

**Sequence:** Met1-Glu510

## Background:

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 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.