

**MACROPHAGE COLONY STIMULATING FACTOR
RECEPTOR/Fc CHIMERA (M-CSF R, CD115)**
Human, Recombinant
Expressed in mouse NSO cells

Product Number **M 7559**

Product Description

Recombinant Human Macrophage Colony Stimulating Factor Receptor/Fc Chimera (M-CSF R, CD115) is produced from a DNA sequence encoding the extracellular domain of human M-CSF R protein.¹ Mature recombinant human M-CSF R, a 737 amino acid residue protein, has a calculated molecular mass of approximately 81 kDa. Due to glycosylation, recombinant M-CSF R migrates as a 150 kDa protein in SDS-PAGE under reducing conditions.

Macrophage Colony Stimulating Factor Receptor is the homodimeric product of the *c-fms* proto-oncogene¹ and maps to chromosome 5 at band 5q33.3. It is a member of the type III subfamily of receptor tyrosine kinases.^{2,3,4} Other members of this subfamily include Flt-3, the receptor for SCF, and the α and β receptors for PDGF. These receptors are characterized by the presence of five immunoglobulin-like domains in their extracellular region and a split kinase domain in their intracellular region. Protein kinase C activation induces the proteolytic cleavage of M-CSF receptor from the cell surface, resulting in the release of the functional ligand-binding extracellular domain.

M-CSF receptor is expressed primarily on cells of the monocyte/macrophage lineage and in various tissues of the developing placenta. During maturation of mono-nuclear phagocytic cells, the number of M-CSF receptors increases to a maximum on mature tissue macrophages. The presence of M-CSF receptors on placental trophoblasts and the greatly increased expression of uterine M-CSF during pregnancy indicate that it may also play a significant role in placenta development. M-CSF receptor binds M-CSF with high affinity and is a potent M-CSF antagonist. M-CSF binding induces receptor homodimerization, resulting in transphosphorylation of specific cytoplasmic tyrosine residues and signal transduction.⁵

Product Information

Reagent

Recombinant Human Macrophage Colony Stimulating Factor Receptor/Fc Chimera (M-CSF R) is supplied as 100 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline containing 5 mg bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate buffered saline (PBS) containing at least 0.1 % human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 50 μ g/ml.

Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing. Do not store in frost-free freezers.

Product Profile

Recombinant Human M-CSF Receptor is measured by its ability to inhibit the M-CSF induced proliferation of the murine monocytic cell line, M-NFS-60 cells.⁶

The ED₅₀ is generally 0.004 to 0.012 μ g/ml in the presence of 1 ng/ml of recombinant human M-CSF. The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: >97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin: <0.1 ng/ μ g determined by the LAL (Limulus amebocyte lysate) method.

References

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3. Rohrschneider, L., The macrophage colony-stimulating factor (M-CSF) receptor, in: *Guidebook to Cytokines and Their Receptors*. Nicola, N. ed., Oxford Press (New York, NY: 1994), pp. 168-170.
4. Sherr, C.J. Colony-stimulating factor-1 receptor. *Blood*, **75**, 1-12 (1990).
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KAA 03/01

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