Recombinant Mouse M-CSF R/CD115 Fc Chimera

Catalog Number: 3818-MR

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse M-CSF R/CD115 protein

N-terminal Sequence Analysis	Ala20
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	82.3 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	115-135 kDa, reducing conditions
Activity	Measured by its ability to inhibit the M-CSF-induced proliferation of M-NFS-60 mouse myelogenous leukemia lymphoblast cells. Halenbeck, R. *et al.* (1989) Biotechnology **7**:710. The ED_{50} for this effect is 0.2-0.8 µg/mL in the presence of 10 ng/mL mouse M-CSF.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	• 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

BACKGROUND

M-CSF receptor, the product of the *c-fms* proto-oncogene, is a member of the type III subfamily of receptor tyrosine kinases that also includes receptors for SCF and PDGF. These receptors each contain five immunoglobulin-like domains in their extracellular domain (ECD) and a split kinase domain in their intracellular region (1-4). M-CSF receptor is expressed primarily on cells of the monocyte/macrophage lineage, dendritic cells, stem cells and in the developing placenta (1). Mouse M-CSF receptor cDNA encodes a 977 amino acid (aa) type I membrane protein with a 19 aa signal peptide, a 492 aa extracellular region containing the ligand-binding domain, a 25 aa transmembrane domain and a 441 aa cytoplasmic domain. The mouse M-CSF R ECD shares >99% aa identity with rat and 60-63% aa identity with corresponding sequences in human, canine, feline and bovine M-CSF R. Activators of protein kinase C induce TACE/ADAM17 cleavage of the M-CSF receptor, releasing the functional ligand-binding extracellular domain (5). M-CSF binding induces receptor homodimerization, resulting in transphosphorylation of specific cytoplasmic tyrosine residues and signal transduction (6). The intracellular domain of activated M-CSF R binds more than 150 proteins that affect cell proliferation, survival, differentiation and cytoskeletal reorganization. Among these, PI3Kinase, P42/44 ERK and c-Cbl are key transducers of M-CSF R signals (3, 4). M-CSF R engagement is continuously required for macrophage survival and regulates lineage decisions and maturation of monocytes, macrophages, osteoclasts and DC (3, 4). M-CSF R and integrin $\alpha_v\beta_3$ share signaling pathways during osteoclastogenesis, and deletion of either causes osteopetrosis (7, 8). In the brain, microglia expressing increased M-CSF R are concentrated with Alzheimers aβ peptide, but their role in pathogenesis is unclear (9, 10).

References:

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449