

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human M-CSF R/CD115 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 61710
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human M-CSF R/CD115 Ile20-Glu512 Accession # P07333.2
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS	
Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.	
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.02-1 µg/mL of this antibody will block 50% of the binding of 2 ng/mL of Recombinant Human M-CSF (Catalog # 216-MC) to immobilized Recombinant Human M-CSF R/CD115 Fc Chimera (Catalog # 329-MR) coated at 0.5 µg/mL (100 µL/well). At 2.5 µg/mL, this antibody will block >90% of the binding.

PREPARATION AND STORAGE	
Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °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). Human M-CSF receptor cDNA encodes a 972 amino acid (aa) type I membrane protein with a 19 aa signal peptide, a 493 aa extracellular region containing the ligand-binding domain, a 25 aa transmembrane domain, and a 435 aa cytoplasmic domain. The human M-CSF R ECD shares 60%, 64%, 72%, 75%, 75%, and 76% aa identity with mouse, rat, bovine, canine, feline, and equine M-CSF R, respectively. 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 β peptide, but their role in pathogenesis is unclear (9, 10).

References:

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