

## DESCRIPTION

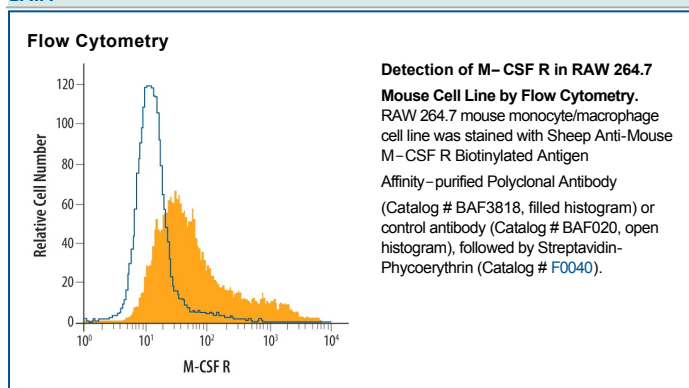
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse M-CSF R in Western blots. In Western blots, approximately 25% cross-reactivity with recombinant human M-CSF R is observed.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse M-CSF R Ala20-Ser511 Accession # P09581
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Mouse M-CSF R Fc Chimera (Catalog # 3818-MR)
<b>Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	See Below

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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  $a\beta$  peptide, but their role in pathogenesis is unclear (9, 10).

## References:

1. deParseval, N. *et al.* (1993) *Nucleic Acids Res.* **21**:750.
2. Rothwell, V.M. and L.R. Rohrschneider (1987) *Oncogene Res.* **1**:311.
3. Chitu, V. and E.R. Stanley (2006) *Curr. Opin. Immunol.* **18**:39.
4. Ross, F.P. and S.L. Teitelbaum (2005) *Immunol. Rev.* **208**:88.
5. Rovida, E. *et al.* (2001) *J. Immunol.* **166**:1583.
6. Yeung, Y. *et al.* (1998) *J. Biol. Chem.* **273**:17128.
7. Dai, X. *et al.* (2002) *Blood* **99**:111.
8. Faccio, R. *et al.* (2003) *J. Clin. Invest.* **111**:749.
9. Li, M. *et al.* (2004) *J. Neurochem.* **91**:623.
10. Mitrasinovic, O.M. *et al.* (2005) *J. Neurosci.* **25**:4442.