

# M-CSF Receptor Antibody

100  $\mu$ l  
 (10 western blots)

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**This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.**

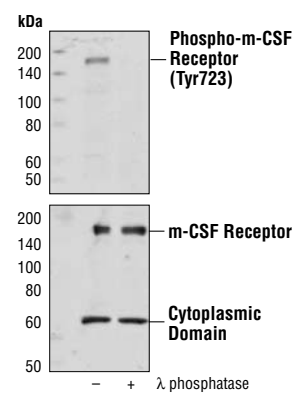
Applications	Species Cross-Reactivity*		Molecular Wt. 52 kDa, 140 kDa	Source Rabbit**
	W	H, M		
Endogenous				

**Background:** Macrophage-colony stimulating factor (M-CSF, CSF-1) receptor is an integral membrane tyrosine kinase encoded by the *c-fms* proto-oncogene. M-CSF receptor is expressed in monocytes (macrophages and their progenitors) and drives growth and development of this blood cell lineage. (1-3). Binding of M-CSF to its receptor induces receptor dimerization, activation and autophosphorylation of cytoplasmic tyrosine residues used as docking sites for SH2-containing signaling proteins (4). There are at least five major tyrosine autophosphorylation sites. Tyr723 (Tyr721 in mouse) is located in the kinase insert (KI) region. Phosphorylated Tyr723 binds the p85 subunit of PI3 kinase as well as PLC- $\gamma$ 2 (5). Phosphorylation of Tyr809 provides a docking site for Shc (5). Overactivation of this receptor can lead to a malignant phenotype in various cell systems (6). The activated M-CSF receptor has been shown to be a predictor of poor outcome in advanced epithelial ovarian carcinoma (7) and breast cancer (8).

After initial dimerization and autophosphorylation, the CSF-1 receptor undergoes regulated intramembrane proteolysis (RIP) which involves proteolytic processing of this membrane protein and results in release of the extracellular domain, intramembrane cleavage and release of the cytoplasmic domain into the cytosol (9). The activated intracellular domain then moves to the nucleus and regulates transcription of specific genes (10). It has been shown that the processing and down modulation of CSF-1 receptor is a continuous process and its rate increases substantially in response to a variety of stimuli including PMA, LPS, tumor necrosis factor, IL-2, IL-4 and its physiological ligand CSF-1 (9).

**Specificity/Sensitivity:** M-CSF Receptor Antibody detects endogenous levels of M-CSF receptor.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to carboxy-terminal residues of human M-CSF receptor. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from GDM-1 cells, untreated or  $\lambda$  phosphatase-treated, using Phospho-M-CSF Receptor (Tyr723) Antibody (upper) or M-CSF Receptor Antibody #3152 (lower).

**Background References:**

- (1) Stanley, E.R. et al. (1978) *Nature* 274, 168–170.
- (2) Byrne, P.V. et al. (1981) *J. Cell. Biol.* 91, 848–853.
- (3) Bourette, R.P. et al. (2000) *Growth Factors* 17, 155–166.
- (4) Novak, U. et al. (1996) *Oncogene* 13, 2607–2613.
- (5) Bourette, R.P. et al. (1997) *EMBO J.* 16, 5880–5893.
- (6) Morley, G.M. et al. (1999) *Oncogene* 18, 3076–3084.
- (7) Toy, E.P. et al. (2001) *Gynecol. Oncol.* 80, 194–200.
- (8) Maher, M.G. et al. (1998) *Clin. Cancer Res.* 4, 1851–1856.
- (9) Wilhelmssen, K. et al. (2004) *Mol. Cell. Biol.* 24(1), 454–464.
- (10) Urban, S. et al. (2002) *Curr. Opin. Genet. Dev.* 12, 512–518.

**Entrez-Gene ID** #1436  
**Swiss-Prot Acc.** #P07333

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

**\*Species cross-reactivity is determined by western blot.**

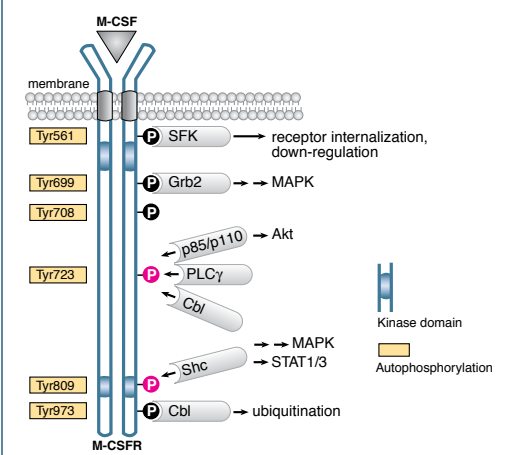
**\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**

Western Blotting 1:1000

**For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

**Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.**



**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.