Revision 1

Store at -20C

#3152

CSF-1R/M-CSF-R Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M	Endogenous	52 cytoplasmic domain. 140 precursor. 175 M-CSF Receptor.	Rabbit	#P07333	1436

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

CSF-1R/M-CSF-R Antibody detects endogenous levels of CSF-1R/M-CSF-R.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to carboxy-terminal residues of human CSF-1R/M-CSF-R. Antibodies are purified by protein A and peptide affinity chromatography.

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 PLCγ2 (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) that involves proteolytic processing of this membrane protein and results in release of 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).

Background References

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3. Bourette, R.P. and Rohrschneider, L.R. (2000) *Growth Factors* 17, 155-66.
4. Novak, U. et al. (1996) *Oncogene* 13, 2607-13.
5. Bourette, R.P. et al. (1997) *EMBO J* 16, 5880-93.
6. Morley, G.M. et al. (1999) *Oncogene* 18, 3076-84.
7. Toy, E.P. et al. (2001) *Gynecol Oncol* 80, 194-200.
8. Maher, M.G. et al. (1998) *Clin Cancer Res* 4, 1851-6.
9. Wilhelmsen, K. and van der Geer, P. (2004) *Mol Cell Biol* 24, 454-64.
10. Urban, S. and Freeman, M. (2002) *Curr Opin Genet Dev* 12, 512-8.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse

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