Revision 3

Store at -20C

#14582

CSF-1R/M-CSF-R (E7S2S) Rabbit mAb

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, W-S	H	Endogenous	175	Rabbit IgG	#P07333	1436

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Simple Western™	1:10 - 1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

CSF-1R/M-CSF-R (E7S2S) Rabbit mAb recognizes endogenous levels of total CSF-1R/M-CSF-R protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly92 of human CSF-1R/M-CSF-R protein.

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 M-CSF receptor undergoes a regulated intramembrane proteolysis (RIP) involving two cleavage events. Extracellular cleavage of this membrane protein results in release of the extracellular domain, while cleavage in the transmembrane region releases the cytoplasmic domain into the cytosol (9). The activated intracellular domain localizes to the nucleus to regulate transcription of specific pro-inflammatory genes (10). Research studies indicate that the processing and down regulation of M-CSF receptor is a continuous process whose rate increases in response to various stimuli, including PMA, LPS, tumor necrosis factor, IL-2, Il-4, and the physiological ligand M-CSF (9).

Background References

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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. Glenn, G. and van der Geer, P. (2007) *FEBS Lett* 581, 5377-81.

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 **W-S:** Simple Western™

Cross-Reactivity Key

H: Human

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