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MCSF Receptor (CSF1R) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7604b

Product Information

Application	IHC-P, WB, FC, E
Primary Accession	P07333
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB01520
Calculated MW	107984
Antigen Region	940-971

Additional Information

Gene ID	1436
Other Names	Macrophage colony-stimulating factor 1 receptor, CSF-1 receptor, CSF-1-R, CSF-1R, M-CSF-R, Proto-oncogene c-Fms, CD115, CSF1R, FMS
Target/Specificity	This MCSF Receptor (CSF1R) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 940-971 amino acids from the C-terminal region of human MCSF Receptor (CSF1R).
Dilution	IHC-P~~1:100~500 WB~~1:1000 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MCSF Receptor (CSF1R) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CSF1R
Synonyms	FMS

Function	Tyrosine-protein kinase that acts as a cell-surface receptor for CSF1 and IL34 and plays an essential role in the regulation of survival, proliferation and differentiation of hematopoietic precursor cells, especially mononuclear phagocytes, such as macrophages and monocytes. Promotes the release of pro-inflammatory chemokines in response to IL34 and CSF1, and thereby plays an important role in innate immunity and in inflammatory processes. Plays an important role in the regulation of osteoclast proliferation and differentiation, the regulation of bone resorption, and is required for normal bone and tooth development. Required for normal male and female fertility, and for normal development of milk ducts and acinar structures in the mammary gland during pregnancy. Promotes reorganization of the actin cytoskeleton, regulates formation of membrane ruffles, cell adhesion and cell migration, and promotes cancer cell invasion. Activates several signaling pathways in response to ligand binding, including the ERK1/2 and the JNK pathway (PubMed:20504948, PubMed:30982609). Phosphorylates PIK3R1, PLCG2, GRB2, SLA2 and CBL. Activation of PLCG2 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate, that then lead to the activation of protein kinase C family members, especially PRKCD. Phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, leads to activation of the AKT1 signaling pathway. Activated CSF1R also mediates activation of the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1, and of the SRC family kinases SRC, FYN and YES1. Activated CSF1R transmits signals both via proteins that directly interact with phosphorylated tyrosine residues in its intracellular domain, or via adapter proteins, such as GRB2. Promotes activation of STAT family members STAT3, STAT5A and/or STAT5B. Promotes tyrosine phosphorylation of SHC1 and INPP5D/SHIP-1. Receptor signaling is down-regulated by protein phosphatases, such as INPP5D/SHIP-1, that dephosphorylate the receptor and its downstream effectors, and by rapid internalization of the activated receptor. In the central nervous system, may play a role in the development of microglia macrophages (PubMed:30982608).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Expressed in bone marrow and in differentiated blood mononuclear cells

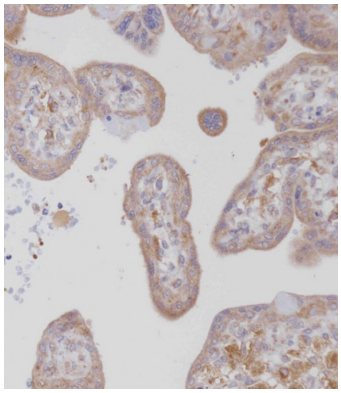
Background

CSF1R is the receptor for colony stimulating factor 1, a cytokine which controls the production, differentiation, and function of macrophages. This receptor mediates most if not all of the biological effects of this cytokine. Ligand binding activates the receptor kinase through a process of oligomerization and transphosphorylation. This protein is a tyrosine kinase transmembrane receptor and member of the CSF1/PDGF receptor family of tyrosine-protein kinases. Mutations in the gene encoding CSF1R have been associated with a predisposition to myeloid malignancy.

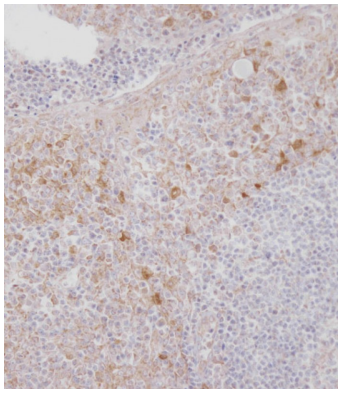
References

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Riccioni, R., et al., Leukemia 17(1):98-113 (2003).
Zhu, K., et al., Biochem. Biophys. Res. Commun. 297(5):1211-1217 (2002).
Ide, H., et al., Proc. Natl. Acad. Sci. U.S.A. 99(22):14404-14409 (2002).
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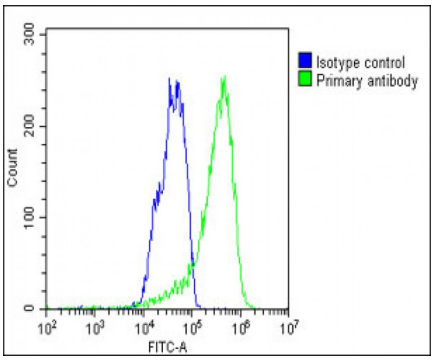
Images



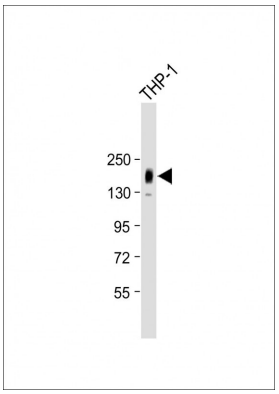
Immunohistochemical analysis of AP7604B on paraffin-embedded Human placenta tissue. Tissue was fixed with formaldehyde at room temperature. Heat induced epitope retrieval was performed by EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:100) for 1 hour at room temperature. Undiluted CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.



Immunohistochemical analysis of AP7604B on paraffin-embedded Human tonsil tissue. Tissue was fixed with formaldehyde at room temperature. Heat induced epitope retrieval was performed by EDTA buffer (pH9. 0). Samples were incubated with primary antibody(1:100) for 1 hour at room temperature. Undiluted CRF Anti-Polyvalent HRP Polymer antibody was used as the secondary antibody.

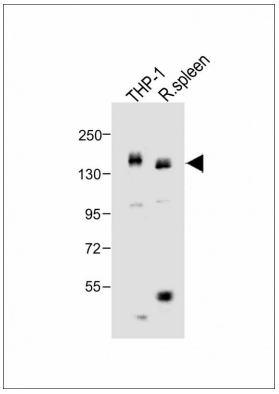


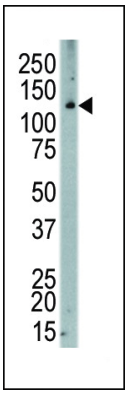
Overlay histogram showing HepG2 cells stained with AP7604b(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP7604b, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(1583138) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



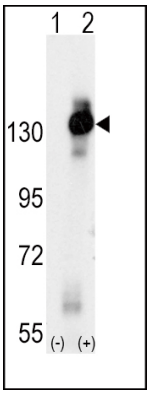
Anti-MCSF Receptor (CSF1R) Antibody (C-term) at 1:2000 dilution + THP-1 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 108 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes : Anti-MCSF Receptor (CSF1R) Antibody (C-term) at 1:1000 dilution Lane 1: THP-1 whole cell lysate Lane 2: rat spleen lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 108 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

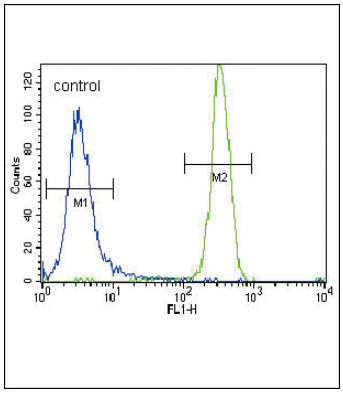




Western blot analysis of anti-CSF1R Pab (Cat. #AP7604b) in human placenta. CSF1R (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

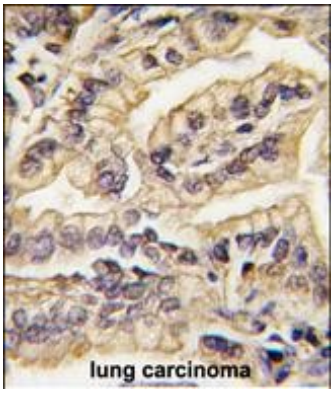


Western blot analysis of CSF1R (arrow) using rabbit polyclonal CSF1R Antibody (C-term)(Cat.#AP7604b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the CSF1R gene (Lane 2) (Origene Technologies).



MCSF Receptor (CSF1R) Antibody (C-term) (Cat. #AP7604b) flow cytometric analysis of NCI-H460 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with CSF1R Antibody (C-term) (Cat.#AP7604b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Citations

- Colony-stimulating factor-1 and colony-stimulating factor-1 receptor co-expression is associated with disease progression in gastric cancer.

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