

## F4/80 (3H2113): sc-71088

### BACKGROUND

The epidermal growth factor (EGF)-TM7 family constitutes a group of class B G protein-coupled receptors, which includes CD97, EMR1 (EGF-like molecule containing mucin-like hormone receptor 1, designated F4/80 in mouse), EMR2, EMR3, FIRE and ETL. These family members are characterized by an extended extracellular region with several N-terminal EGF domains, and are predominantly expressed on cells of the immune system. The EGF-TM7 protein family are encoded by a gene cluster on human chromosome 19p13.3. The F4/80 molecule is solely expressed on the surface of macrophages and serves as a marker for mature macrophage tissues, including Kupffer cells in liver, splenic red pulp macrophages, brain microglia, gut lamina propria and Langerhans cells in the skin. F4/80/EMR1 undergoes extensive N-linked glycosylation as well as some O-linked glycosylation. The function of F4/80/EMR1 is unclear, but it is speculated to be involved in macrophage adhesion events, cell migration or as a G protein-coupled signaling component of macrophages.

### REFERENCES

1. Baud, V., et al. 1995. EMR1, an unusual member in the family of hormone receptors with seven transmembrane segments. *Genomics* 26: 334-344.
2. Haidl, I.D. and Jefferies, W.A. 1996. The macrophage cell surface glycoprotein F4/80 is a highly glycosylated proteoglycan. *Eur. J. Immunol.* 26: 1139-1146.
3. Mander, T.H. and Morris, J.F. 1996. Development of microglia and macrophages in the postnatal rat pituitary. *Cell Tissue Res.* 286: 347-355.
4. McKnight, A.J., et al. 1998. Chromosome mapping of the EMR1 gene. *Mamm. Genome* 8: 946.
5. Carver, E.A., et al. 2000. Physical mapping of EMR1 and CD97 in human chromosome 19 and assignment of Cd97 to mouse chromosome 8 suggest an ancient genomic duplication. *Mamm. Genome* 10: 1039-1040.
6. Lin, H.H., et al. 2000. Human EMR2, a novel EGF-TM7 molecule on chromosome 19p13.1, is closely related to CD97. *Genomics* 67: 188-200.
7. Kwakkenbos, M.J., et al. 2002. The human EGF-TM7 family member EMR2 is a heterodimeric receptor expressed on myeloid cells. *J. Leukoc. Biol.* 71: 854-862.
8. Schaller, E., et al. 2002. Inactivation of the F4/80 glycoprotein in the mouse germ line. *Mol. Cell. Biol.* 22: 8035-8043.

### CHROMOSOMAL LOCATION

Genetic locus: *Emr1* (mouse) mapping to 17 D.

### SOURCE

F4/80 (3H2113) is a rat monoclonal antibody raised against thioglycollate-stimulated peritoneal macrophages of mouse origin.

### PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### APPLICATIONS

F4/80 (3H2113) is recommended for detection of F4/80 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for F4/80 siRNA (m): sc-42865, F4/80 shRNA Plasmid (m): sc-42865-SH and F4/80 shRNA (m) Lentiviral Particles: sc-42865-V.

Molecular Weight of F4/80: 160 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213 or M1 whole cell lysate: sc-364782.

### SELECT PRODUCT CITATIONS

1. Maekawa, T., et al. 2010. The role of ATF-2 family transcription factors in adipocyte differentiation: antiobesity effects of p38 inhibitors. *Mol. Cell. Biol.* 30: 613-625.
2. Duca, F.A., et al. 2014. Replication of obesity and associated signaling pathways through transfer of microbiota from obese-prone rats. *Diabetes* 63: 1624-1636.
3. Zhang, H., et al. 2016. Pathophysiology of chronic pancreatitis induced by dibutyltin dichloride joint ethanol in mice. *World J. Gastroenterol.* 22: 2960-2970.
4. Bechelli, J., et al. 2016. MyD88 mediates instructive signaling in dendritic cells and protective inflammatory response during rickettsial infection. *Infect. Immun.* 84: 883-893.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.