Peninsula Laboratories, LLC

A Member of the Bachem Group

305 Old County Road, San Carlos, CA 94070
Tel: (800) 922-1516 • (650) 592-5392
Fax: (650) 595-4071
www.bachem.com

Monoclonal Antibody To Mouse Macrophages

F4/80 Antigen - Majority Of Resident Tissue Macrophages

Monoclonal antibody CI:A3-1 recognizes the F4/80 antigen, a 120-160kD glycoprotein containing 7 EGF-like domains at the N-terminus, an RGD (Arg-Gly-Asp) integrin binding motif, and significant homology to the transmembrane 7 (Tm7) hormone receptor family at the C-terminus. The molecular structure suggests multiple ligands. F4/80 may participate in macrophage adhesion within certain tissues, combined with receptor signalling following peptide-ligand interaction. The antigen is expressed by most macrophages and macrophage precursors beyond M-CFC, and increases upon maturation. Activated macrophages and eosinophiles express low levels. Freshly isolated spleen dendritic cells are uniformly positive for F4/80, but the expression decreases upon culture. This antibody may be a useful alternative to monoclonal antibody BM8 (product T-2006) and MOMA-2 (product T-2007).

Product Number:	T-2008
Clone:	CI:A3-1
Host species, isotype:	Rat IgG2b
Quantity:	500μg
Format:	Affinity purified, liquid
	Supplied as 0.5ml solution. This stock solution contains 1mg/ml IgG, phosphate buffered saline pH 7.2 (PBS) and 0.1% sodium azide as a preservative.
Stability:	Stock solution or aliquots thereof: 1 year at -20°C. Avoid repeated thawing and freezing.
Applications:	Tested for immunohistochemistry (IHC); has been described to work in FACS, immunoprecipitation and western blot.
	Approximate working dilution for IHC: Frozen sections: 2μg/ml (1:500) Paraffin sections: 5μg/ml (1:200); Proteinase K pretreatment for antigen retrieval is recommended.
	Optimal dilutions should be determined by the end user.
	Suggested positive control: Mouse spleen.
Immunogen:	Peritoneal mouse macrophages.
Antigen, epitope:	The antigen is the 120-160kDa membrane protein of F4/80. The epitope has not been further characterized.

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Antigen distribution:

Isolated Cells: F 4/80 is recognised on monocytes of the peripheral blood and the bone marrow.

Tissue Sections: The determination of F 4/80 is already widely used for the detection of tissue macrophages. F4/80 positive macrophages, however, consist of different subpopulations from those detected with BM 8 or MOMA-2.

Comparison of different mature macrophage markers

	MOMA-2	BM8	Cl:A3-1	ER-BMDM 1
Monocytes	+	+	+	-
Kupffer cells	+	+	+	-
Langerhans cells	±	+	+	
Tingible body macrophages	+	-	-	
Interdigitating cells	±	-	-	+
Dendritic cells	+	-	-	+
Microglial cells	-		+	-
Marginal zone macrophages	-	-	-	
Marginal metallophillic cells	-	-	-	-
Pneumocytes type II				+
Alveolar lavage cells		66%	41%	26%
Resident peritoneal cells		51%	47%	34%
Thioglycate elicited peritoneal cells				
time after injection 8h		28%	17%	15%
4h		81%	73%	79%
Bone Marrow cells	14%	37%	27%	5%
Bone Marrow cells after 7 days in culture supplemented with M-CSF	30%	96%	90%	91%

Kraal et al. (1987) modified and P.J.M. Leenen personal communication

Specificity:

Mouse: monocytes, macrophages

Other: unknown

Selected references

Hume, D. et al.: The Mononuclear Phagocyte System of the Mouse defined by Immunohistochemical Localisation of Antigen. J. Exp. Med.: 158, 1522 - 1536 (1983).

Felix, R.et al.: Impairment of Macrophage Colony-stimulating Factor Production and lack of resident bone Marrow Macrophages in the osteoporotic op/op Mouse. J. Bone & Mineral Res.: 5/7, 781 - 789, (1990).

Sunderkotter, C. et al.: Cellular events associated with Inflammatory Angiogenesis int the Mouse Cornea. Am. J. Path. 138, 931 - 939, (1991).

Kraal, G. et al.: Macrophages in T and B Cell Compartments and Other Tissue Macrophages Recognized by Monoclonal Antibody MOMA-2; An Immunohistochemical Study. Scand. J. Immunol.: 26, 653 - 661 (1987).

For in vitro research only. Caution: this product contains sodium azide, a poisonous and hazardous substance.