



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 BM8 recognizes the F4/80 antigen on major subpopulations of resident tissue macrophages (Schaller *et al.* 2002). The antigen expression increases upon maturation of macrophage precursors in bone marrow and blood as well as in ontogeny. BM8 is the only macrophage marker that is able to distinguish non-destructive from destructive inflammation processes in the pancreas and has been shown to be a unique histological marker of the progression from peri-insulitis to β -cell destruction and diabetes in a mouse diabetes model.

Product Number:	T-2006
Clone:	BM8
Host species, isotype:	Rat IgG2a
Quantity:	200 μ g
Format:	Affinity purified, lyophilized Reconstitute by adding 0.5ml distilled water. This stock solution contains 0.4mg/ml IgG, phosphate buffered saline pH 7.2 (PBS), 5mg/ml bovine serum albumin (BSA) as a stabilizer and 0.09% sodium azide as a preservative.
Stability:	Original vial: 1 year at 4° - 8°C 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. Approximate working dilution for IHC: Frozen sections: 0.4 μ g/ml (1:1000) Paraffin sections: 4 μ g/ml (1:100); Proteinase K pretreatment for antigen retrieval is recommended. Optimal dilutions should be determined by the end user. Suggested positive control: Mouse spleen.
Immunogen:	Cultured macrophages.
Antigen, epitope:	The antigen is a 125kD extracellular membrane protein sensitive to 2-mercaptoethanol.
Antigen distribution:	Isolated Cells: The antigen is expressed <i>in vitro</i> on over 80% of M-CSF stimulated bone marrow derived macrophages, after a few days of culture. It is absent from granulocytes, lymphocytes and thrombocytes.



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Tissue Sections: The antigen is detected on tissue fixed macrophages in all organs tested so far (spleen, lymph nodes, thymus, liver, skin). It is also present on Langerhans cells in the skin and Kupffer cells in the liver. In complete Freund's adjuvant induced granulomas the antigen is expressed by inflammatory macrophages, but is absent from epitheloid cells.

Comparison of different mature macrophage markers

Product number	BM8 (anti F4/80) T-2006	MOMA-2 T-2007	ER-BMDM 1 T-2015
Monocytes	+	+	-
Kupffer cells	+	+	-
Langerhans cells	+	+/-	
Tingible body macrophages	-	+	
Interdigitating cells	-	+/-	+
Dendritic cells	-	+/-	+
Microglial cells		-	-
Marginal zone macrophages	-	-	
Marginal metallophilic cells	-	-	-
Pneumocytes type II			+
Alveolar lavage cells	66%		26%
Resident peritoneal cells (PCs)	51%		34%
Thioglycollate elicited PCs time after injection: 4hours	81%		79%
time after injection: 8 hours	28%		15%
Bone Marrow (BM) cells	37%	14%	5%
BM cells after 7 days with M-CSF	96%	30%	91%

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

Specificity:

Mouse: major subpopulation of resident tissue macrophages

Other species: human heart macrophages

Selected references

Schaller, E. et al.: Inactivation of the F4/80 glycoprotein in the mouse germ line. Mol. Cell Biol. 22: 8035-43 (2002).

Rosmalen, J.G.M. et al.: Subsets of Macrophages and Dendritic Cells in Nonobese Diabetic Mouse Pancreatic Inflammatory Infiltrates. Lab. Invest. 80: 23-30 (2000)

Leenen, P.J.M. et al.: Markers of mouse macrophage development detected by monoclonal antibodies. J. Immunol. Methods, 174: 5-19 (1994).

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

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