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## **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-insulinitis to  $\beta$ -cell destruction and diabetes in a mouse diabetes model.

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<b>Product Number:</b>	T-2006 (Lot 13PO0804)
<b>Clone:</b>	BM8
<b>Host species, isotype:</b>	Rat IgG2a
<b>Quantity:</b>	200 $\mu$ g
<b>Format:</b>	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.
<b>Stability:</b>	Original vial: 1 year at 4° - 8°C  Stock solution or aliquots thereof: 1 year at -20°C. Avoid repeated thawing and freezing.
<b>Applications:</b>	Tested for immunohistochemistry (IHC); has been described to work in FACS.  <b>Approximate working dilution for IHC:</b> Frozen sections: 0.4 $\mu$ g/ml (1:1000) Paraffin sections: 4 $\mu$ 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.  Please see <a href="http://www.bma.ch">www.bma.ch</a> for protocols and general information.
<b>Immunogen:</b>	Cultured macrophages.
<b>Antigen, epitope:</b>	The antigen is a 125kD extracellular membrane protein sensitive to 2-mercaptoethanol.

**Antigen distribution:**

**Isolated Cells:** The antigen is expressed *in vitro* 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.

**Tissue Sections:** The antigen is detected on tissue fixed macrophages in all organs tested so far (spleen, lymph nodes, thymus, liver, skin) except lung. 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	<b>BM8 (anti F4/80)</b> T-2006	<b>MOMA-2</b> T-2007	<b>ER-BMDM 1</b> 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%

\*could not be confirmed on alveolar macrophages by immunohistochemistry (IHC)  
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

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### **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.