



**BMA BIOMEDICALS**

BMA BIOMEDICALS  
Rheinstrasse 28-32  
CH-4302 Augst (Switzerland)  
Phone: ++41 61 811 6222  
Fax: ++41 61 811 6006  
info@bma.ch  
www.bma.ch

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## **Monoclonal Antibody To Human Macrophages Possibly Recognizing A Scavenger Receptor**

Monoclonal antibody X-4, together with X-14, and PM-2K, forms a particular group of macrophage specific antibodies which were tested at the Vth Leukocyte Typing Workshop held in Boston in 1993. The X-4 antigen was initially suspected to function as a scavenger receptor. However, experiments with CHO cells expressing Macrophage Scavenger Receptor (MSR) AI or All showed that they were not recognized by this antibody.

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<b>Product Number:</b>	T-1049 (Lot 01PO9406)
<b>Clone:</b>	X-4
<b>Host species, isotype:</b>	Mouse IgG1
<b>Quantity:</b>	100µg
<b>Format:</b>	Affinity purified, lyophilized  Reconstitute by adding 0.5ml distilled water. This stock solution contains 0.2mg/ml IgG, phosphate buffered saline pH 7.2 (PBS), 10mg/ml bovine serum albumin (BSA) as a stabilizer and 0.01% thimerosal 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).  <b>Approximate working dilution for IHC:</b> Frozen sections: 2µg/ml (1:100) Paraffin sections: not tested.  Optimal dilutions should be determined by the end user. Suggested positive control: Human placenta.  Please see <a href="http://www.bma.ch">www.bma.ch</a> for protocols and general information.
<b>Immunogen:</b>	Cultured human monocytes.
<b>Antigen, epitope:</b>	The antigen is a protein of 100kDa as determined by immunoprecipitation. It is found on the cytoplasmic membranes of macrophages. The epitope has not been determined.

**Antigen distribution:** **Isolated cells:** Positive on peritoneal macrophages and on cultivated macrophages with serum supplementation. Positive in AML but not on blast cells. Negative under serum-free conditions, on freshly isolated monocytes and on fMLP activated neutrophils. U937 cells show increased antigen expression after TNF $\alpha$  and GM-CSF treatment.

**Tissue sections:** X-4 is positive on macrophages, Kupffer cells, mesangial cells and Hoffbauer cells. It is positive on intrafollicular and paracortical dendritic and spindle macrophages and with macrophages and foamy cells in *Xathoma disseminatum* but negative in sarcoid granuloma and histiocytosis X.

**Specificity:** **Human:** Macrophages.

**Other species:** positive with rabbit, cat, dog, goat, pig, horse, monkey, weak on guinea pig, negative with bovine and rat.

#### Comparison of Staining Patterns of X-4, X-14<sup>a</sup> and PM-2K<sup>b</sup> on different cell types

	X-4	X-14	PM-2K
Lymph nodes tingible body macrophages	<u>+</u>	-	<u>+</u>
Brain microglial cells	<u>+</u>	-	<u>+</u>
Blood monocytes 24h culture	<u>+</u>	-	-

+ = positive, + = weakly positive, - = negative

a: Product T-1050

b: Product T-1051

#### Selected references

XU, H., STEINHAUSEN, F., PETERS, J.H.: Identification of Differentiation Antigens on Human Monocytes and Macrophages with Newly Produced Monoclonal Antibodies. *Exp. Cell. Biol.* **57**, 122 (1989).

SHAW, S. et al. *Leukocyte Typing V: White Cell Differentiation Antigens*, Oxford University Press (1994) Ed. Schlossmann, S. et al. Abstracts M017, M030, M060, M081, M105, M132, M138, M145 (X-14 Workshop Codes = M51, BP264)

Zeng, L., M. Takeya, X. Ling, A. Nagasaki, K. Takahashi. : Interspecies reactivities of anti-human macrophage monoclonal antibodies to various animal species. *J Histochem Cytochem* **44**: 845-853 (1996).

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