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Product datasheet for SM065P

Macrophages / Monocytes Rat Monoclonal Antibody [Clone ID: MOMA-2]

Product data:

Product Type:	Primary Antibodies
Clone Name:	MOMA-2
Applications:	FC, IHC
Recommended Dilution:	**Flow Cytometry** (Membrane permeabilisation is recommended). **Immunohistochemistry on Fresh Frozen Sections:** 0.5-1.0 µg/ml (1/400-1/800). Fixed with dry acetone at 4°C. ***Recommended Positive Control:*** Mouse spleen. Does not work on Formalin-Fixed, Paraffin-Embedded Tissue Sections.
Reactivity:	Mouse
Host:	Rat
Isotype:	IgG2b
Clonality:	Monoclonal
Immunogen:	Mouse lymph node stroma. **Antigen, epitope:** The antigen is a (glyco-)protein of 140kDa m.w. which is located within the cytoplasm and on the cell surface. The epitope has not been further characterized.

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Specificity:	MOMA-2 is a useful marker for the broad detection of monocytes and macrophages in all mouse strains. In combination with the anti F4/80 marker BM8 (product *Cat.-No* BM4007) it allows a precise characterisation of tissue fixed macrophages in various organs. The antibody stains a mature macrophage subset, monocytes and a few precursors in bone marrow. Dendritic cells show low to intermediate expression. The staining shows close correlation with expression of acid phosphatase in tissue sections. MOMA-2 is predominantly expressed in the cytoplasm, but is also present on the cell surface. MOMA-2 detects a (glyco-)protein of 140kD MW which is located within the cytoplasm and on the cell surface. ***Antigen Distribution*** **Isolated Cells:** In the cytospin preparation of thiogycollate stimulated peritoneal exudate cells MOMA-2 detects an antigen as distinct cytoplasmic spots. MOMA-2 detects monocytes of the peripheral blood and a subpopulation of bone marrow cells. **Tissue Sections:** MOMA-2 detects typical tissue macrophages as does the anti F4/80 specific clone BM8. However, different staining patterns are visible as shown below. The most predominant difference can be observed in T-cell areas and follicles of peripheral lymphoid organs where the anti F4/80 clone BM8 is negative.
Formulation:	PBS, pH 7.2 State: Purified State: Lyophilized purified IgG fraction Stabilizer: 5 mg/ml BSA Preservative: 0.09% Sodium Azide
Reconstitution Method:	Restore by adding 0.5 ml distilled water (= 0.4 mg/ml Stock Solution).
Concentration:	0.4 mg/ml (after reconstitution)
Purification:	Affinity Chromatography
Conjugation:	Unconjugated
Storage:	Store lyophilized at 2-8°C for 6 months or at -20°C long term. After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term. Avoid repeated freezing and thawing.
Stability:	Shelf life: one year from despatch.

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Background: Monocyte and macrophage are white blood cells that roam the body tissues engulfing foreign organisms.
A monocyte is a leukocyte, part of the human body's immune system that protects against blood-borne pathogens and moves quickly (aprox. 8-12 hours) to sites of infection in the tissues. Monocytes are usually identified in stained smears by their large bi-lobed nucleus. Macrophages are cells within the tissues that originate from specific white blood cells called monocytes. Monocytes and macrophages are phagocytes, acting in both nonspecific defense (or innate immunity) as well as specific defense (or cell-mediated immunity) of vertebrate animals. Their role is to phagocytize (engulf and then digest) cellular debris and pathogens either as stationary or mobile cells, and to stimulate lymphocytes and other immune cells to respond to the pathogen.

Synonyms: Macrophage marker, Monocyte marker

Note: The use of commercially available secondary antibodies that have been preadsorbed against mouse serum proteins may yield a weak staining.

Protocol: **Potocol with Frozen, ice-cold acetone-fixed sections:**
The whole procedure is performed at room temperature.
1. Wash in PBS.
2. Block endogenous peroxidase.
3. Wash in PBS.
4. Block with 10% normal goat serum in PBS for 30min. in a humid chamber.
5. Incubate with primary antibody (dilution see datasheet) for 1h in a humid chamber.
6. Wash in PBS.
7. Incubate with secondary antibody (peroxidase-conjugated goat anti rat IgG (H+L) minimal-cross reaction to mouse) for 1h in a humid chamber.
8. Wash in PBS.
9. Incubate with AEC substrate (3-amino-9-ethylcarbazol) for 12min.
10. Wash in PBS.
11. Counterstain with Mayer's hemalum.

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Product images:

Comparison of different mature macrophage markers

	MOMA-2	BM8 (anti F4/80)	ER-BMDM 1
Product number	SM065	BM4007S	BM4009
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 aftet injection: 8 hours		28%	15%
Bone Marrow (BM) cells	14%	37%	5%
BM cells after 7 days with M-CSF	30%	96%	91%

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

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