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Monoclonal Antibody To Rat CD68

Rat Monocytes, Macrophages And Dendritic cells

Monoclonal Antibody ED1 is useful for detecting rat monocytes and macrophages and isolated dendritic (veiled) cells in the blood. The antibody recognises a single chain glycoprotein of 90-100kDa that is expressed predominantly on the lysosomal membrane of myeloid cells. Weak cell surface expression also occurs. The antigen is expressed by the majority of tissue macrophages and weakly by peripheral blood granulocytes. Studies have shown that the antigen recognised by ED1 has many characteristics in common with mouse macrosialin and human CD68.

TECHNICAL AND ANALYTICAL CHARACTERISTICS

Product Number:	T-3003 (Lot 22PO1011)
Clone:	ED1
Host species, isotype:	Mouse IgG1
Quantity:	250µg
Format:	Affinity purified, liquid Supplied as 0.25ml solution. This stock solution contains 1mg/ml IgG, phosphate buffered saline pH 7.2 (PBS), 0.09% sodium azide as a preservative.
Stability:	Original vial: 1 year at 4° - 8°C from date of purchase.
Applications:	Tested for immunohistochemistry (IHC), has been described to work in Western blots, immunoprecipitation of the antigen, and FACS (preferably on permeabilized cells). Approximate working dilution for IHC: Frozen sections: 0.5-1µg/ml (1:1000 – 1:2000) Paraffin sections: 10µg/ml (1:100) Optimal dilutions should be determined by the end user. Suggested positive control: rat spleen. Please see www.bma.ch for protocols and general information.
Immunogen:	Rat spleen cells
Protein database:	rat-Q4FZY1
Antigen, epitope:	CD68; ED1 recognises a 92kD cytoplasmic protein. The epitope has not been further characterized.
Antigen distribution:	The antigen is found on 90% of monocytes in the peripheral blood. It is also expressed by 98% of isolated dendritic (veiled) cells.
Specificity:	Rat: monocytes macrophages, dendritic cells Other species: not tested

Distribution and staining pattern of macrophages identified by ED1, ED2 and ED3 in various organs (from Dijkstra et al., 1985, modified):

Monoclonal Antibody	ED1	ED2	ED3
Staining pattern	Granular, patchy cytoplasmic	Diffuse, membrane	Diffuse, membrane
<u>Spleen</u>			
White pulp			
inner PALS	++	-	+ Weakly
outer PALS	++	+	+ Weakly
follicle	+/-	-	-
marg. metallophils	+/- Weakly	-	+++ Branched
marginal zone	+/- Weakly	-	+++ Branched
Red Pulp	+++	+++	+++ Weakly
<u>Lymph node</u>			
Cortex			
outer cortex	+/- Weakly	-	+++ Subsinusoidal
branched			
paracortical area	++	+	-
follicles	+/-	-	-
Medulla	+++	+ 10-20%	+++
Capsule	+	+	-
<u>Peyer's patches</u>			
Interfollicular area	+++	++	+ Small groups 3-4 cells
Dome	+	-	-
Follicle-	-	-	-
Villi	+++ Apex	++ Apex basis	-
<u>Lung</u>			
BALT	++	Periphery of BALT	-
Perivascular/peribronchial	+	+++	-
Alveolar	+++	-	-
<u>Thymus</u>			
Cortex	++	++ Branched	-
Medulla	++	-	-/+ Weakly
Corticomedullary area	+++	+++	-
Capsule	+++ Branched	+++ Branched	++ Branched
<u>Liver</u>	+++ Branched	+++ Branched	++ Branched
<u>Bone marrow</u>	+++ Monocytes/ macrophages	++ Macrophages	-

+++ = (Almost) all acid phosphatase-positive cells stained with the monoclonal antibody.

++ = A considerable number stained + = Few stained -/+ = Very few stained or none at all

Selected references

DIJKSTRA, C.D et al.: The heterogeneity of mononuclear phagocytes in lymphoid organs: distinct macrophage subpopulations in the rat recognised by monoclonal antibodies ED1, ED2 and ED3. *Immunology*: **54**, 589 - 599 (1985).

BEELEN, R.H.J et al.: Monoclonal Antibodies ED1, ED2, and ED3 Against Rat Macrophages: Expression of Recognized Antigens in Different Stages of Differentiation. *Transplantation Proceedings*: **XIX**, (3), 3166-3170 (1987).

DAMOISEAUX, J.G.M.C. et al.: Rat macrophage lysosomal membrane antigen recognised by monoclonal antibody ED1. *Immunology* **83**, 140-147 (1994)

BAUER, J. et al.: Phagocytic activity of macrophages and microglial cells during the course of acute and chronic relapsing experimental autoimmune encephalomyelitis. *J. Neurosci. Res.* **38**, 365-375 (1994).

For in vitro research only. This product contains sodium azide as a preservative.

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