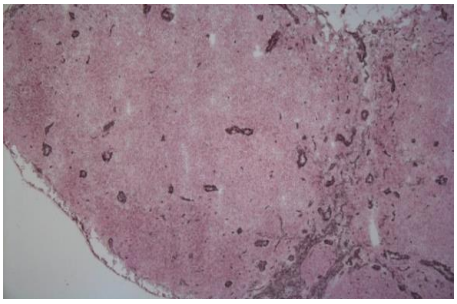
CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	PECAM-1, Mouse, clone ER-MP12		
Catalog number	HM1084-100UG		
Lot number	-	**Expiry date**	-
Volume	1 ml	**Amount**	100 µg
Formulation	0.2 µm filtered in PBS+0.1%BSA+0.02%NaN3	**Concentration**	100 µg/ml
Host Species	Rat IgG2a	**Conjugate**	None
Endotoxin	N.A.	**Purification**	Protein G
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #	3			1,2,4-7		1	1,4	
Yes	●	●		●		●	●	
No								
N.D.			●		●			●

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot



IHC-F: Mouse spleen frozen sections were stained with ER-mp12 (2µg/ml).

Dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.

- Positive control: Macrophage cell line RMB-1.

General Information

Description

The monoclonal antibody ER-MP12 recognizes mouse platelet endothelial cell adhesion molecule-1 (PECAM-1;CD31). PECAM-1 is a 130kDa glycoprotein involved in cell adhesion and a signalling receptor that is expressed on hematopoietic and endothelial cells. It is a member of the immunoglobulin (Ig)-superfamily of cell adhesion molecules. The type I transmembrane protein is composed of an extracellular region of six Ig-like homology domains, a 19-residue transmembrane domain, and a 118 residue cytoplasmic tail and is differentially glycosylated involving N-linked and O-linked glycosylation sites. The signalling of PECAM-1 is based on 2 immuno receptor tyrosine inhibitory motifs (ITIMs) in its cytoplasmic domain. These ITIM domains can serve as docking sites for signalling molecules such as protein tyrosine phosphatases, and ligation of PECAM-1 can induce phosphorylation of tyrosine- and serine/threonine-residues of these intracellular regions eventually leading to activation of signalling pathways. The biological characteristics of PECAM-1 in these pathways and cellular adhesion have been mapped to specific regions of the PECAM-1 molecule.

PECAM-1 is abundantly expressed on endothelial cells, where it is a major constituent of the endothelial cell intercellular junction in confluent vascular beds, making it a commonly used endothelial marker. Furthermore, it is expressed on most cells of the hematopoietic lineage including platelets, monocytes, neutrophils, and lymphocyte subsets. Besides adhesive properties PECAM-1 is an efficient signalling molecule. The protein is involved in vascular biology including angiogenesis, platelet function, and thrombosis, mechanosensing of endothelial cells, and regulation of multiple stages of leukocyte migration through venular walls. PECAM-1 is also a regulator of inflammatory responses. It has been shown to serve a variety of pro-inflammatory and anti-inflammatory functions. Pro-inflammatory functions of PECAM-1 include the facilitation of leukocyte transendothelial migration and the transduction of mechanical signals in endothelial cells originating from fluid shear stress. Anti-inflammatory functions include the

dampening of leukocyte activation, suppression of pro-inflammatory cytokine production, and the maintenance of vascular barrier integrity.
Monoclonal antibody ER-MP12 reacts also with the major population of colony forming unit macrophage (CFU-M) precursor cells, with a subpopulation of pre CFU-M and monoblasts, and with precursor cells of granulocytes. The antibody can also be used, in combination with the monoclonal antibody ER-MP20, for identification of different stages of myeloid progenitor cell development.

Immunogen Mouse macrophage precursor hybrid cells. W1C3 (Ref.1)

Aliases Platelet endothelial cell adhesion molecule-1; CD31; EndoCam

References

1. Leenen, P et al; Murine macrophage precursor characterization II. Monoclonal antibodies against macrophage precursor antigens. Eur J Immunol 1990, *20*: 27
2. De Bruijn, M et al; Distinct mouse bone marrow macrophage precursors identified by differential expression of ER-MP12 and ER-MP20 antigens. Eur J Immunol 1994, *24*: 2279
3. Morioka, Y et al; Immunophenotypic and ultrastructural heterogeneity of macrophage differentiation in bone marrow and fetal hematopoiesis of mouse in vitro and in vivo. J Leukoc Biol 1994, *55*: 642
4. Ling, V et al; Structural identification of the hematopoeitic progenitor antigen ER-MP12 as the vascular endothelial adhesion molecule PECAM-1 (CD31). Eur J Immunol 1997, *27*: 509
5. De Bruijn, M et al; Bone marrow cellular composition in Listeria monocytogenes infected mice detected using ER-MP12 and ER-MP20 antibodies: a flow cytometric alternative to differential counting. J Immunol Methods 1998, *217*: 27
6. Van Rijt, L et al. Allergen-induced accumulation of airway dendritic cells is supported by an increase in CD31hiLy-6Cneg bone marrow precursors in a mouse model of athma. Blood 2002, *100* :3663
7. Jin, M et al. Enhancement of repopulation and hematopoiesis of bone marrow cells in irradiated mice by oral administration of PG101, a water-soluble extract from Lentinus lepideus. Exp biol med 2003, *228* :759

Storage&stability Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.

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Approved by Manager of QC	Date
Brenda Teunissen	12/11/2019

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