OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

SM066P Monoclonal Antibody to CD169 / SIGLEC1 - Purified

Alternate names:	Sialic acid-binding Ig-like lectin 1, Sialoadhesin, Siglec-1
Quantity:	0.2 mg
Concentration:	0.4 mg/ml (after reconstitution)
Background:	Metallophilic macrophages are a subpopulation of mature resident tissue macrophages. They show high non specific esterase activity and can be distinguished from splenic marginal zone macrophages by antibody staining and the lack of FITC-Ficoll uptake.
Uniprot ID:	Q62230
NCBI:	NP_035556
GeneID:	20612
Host / Isotype:	Rat / IgG2a
Recommended Isotype Controls:	SM15P, SM15PX
Clone:	MOMA-1
Immunogen:	Mouse lymph node tissue. **Remarks:** The antigen is found intracellularly and on cell surface on Metallophilic Macrophages.
Format:	**State:** Lyophilized purified IgG fraction **Purification:** Affinity Chromatography **Buffer System:** Stock solutions contains PBS, pH 7.2 with 10 mg/ml BSA as a stabilizer and 0.01% Thimerosal as a preservative **Reconstitution:** Restore by adding 0.5 ml distilled water (= 0.4 mg/ml Stock Solution).
Applications:	**Flow Cytometry.** **Immunohistochemistry on Frozen Sections:** 2 µg/ml (1/200). *Fixation:* Acetone. ***Recommended Positive Control:*** Mouse spleen. Does not react on routinely processed Paraffin Sections. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	Clone MOMA-1 is a useful marker for the identification of Macrophage subpopulations in various organs, mostly characterised by a high level of non-specific esterase expression. The staining is particularly noteworthy with the metallophilic macrophages adjacent to the marginal zone of the spleen. The marker is also very suitable for differentiation of non-metallophilic marginal zone Macrophages as detected by ER-TR9 (*Cat.-No* BM4011). In addition , MOMA-1 detects Macrophages at inflammatory sites and is positive with Kupffer cells. The antigen is differentially induced in in vitro derived Macrophages depending on the colony-stimulating factor applied (IL-3 › M-CSF › GM-CSF). The antigen detected by MOMA-1 is CD169, also known as Sialoadhesin.

Antigen Distribution
Isolated Cells: No reactivity of MOMA-1 was found with dendritic cells, peritoneal resident Macrophages, peritoneal exudate cells, bone marrow or blood cells.
Tissue Sections: Distinct Macrophage subpopulations of lymphoid organs express the antigen. In the spleen, they are localized at the marginal sinus forming a ring around the periarteriolar lymphocyte sheath and follicular areas at the inner side of marginal zones. In lymph nodes, they are localized in the sinusoids and medullary cords, but not within follicular areas or paracortex. In Peyer's patches they are localized in the interfollicular areas at the serosal side. Kupffer cells in the liver can be clearly stained by MOMA-1. No MOMA-1-positive macrophages were found in the thymus, brain, kidney, liver, skin or heart. In non-lymphoid organs, the antigen is only found on a Macrophage subpopulation in the lamina propria of the villi of the small intestine.

Species Reactivity: **Tested:** Mouse: Subpopulation of Mature Resident Tissue Macrophages.

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.
Shelf life: one year from despatch.

Product Citations: **Purchased from Acris:**
1. Movita D, Kreefft K, Biesta P, van Oudenaren A, Leenen PJ, Janssen HL, et al. Kupffer cells express a unique combination of phenotypic and functional characteristics compared with splenic and peritoneal macrophages. J Leukoc Biol. 2012 Oct;92(4):723-33. doi: 10.1189/jlb.1111566. Epub 2012 Jun 8. PubMed PMID: 22685319.

General Readings:
1. Kraal G, Janse M. Marginal metallophilic cells of the mouse spleen identified by a monoclonal antibody. Immunology. 1986 Aug;58(4):665-9. PubMed PMID: 3733156.
2. Oetke C, Kraal G, Crocker PR. The antigen recognized by MOMA-I is sialoadhesin. Immunol Lett. 2006 Jul 15;106(1):96-8. Epub 2006 May 8. PubMed PMID: 16716409.
3. Tumanov AV, Grivennikov SI, Kruglov AA, Shebzukhov YV, Koroleva EP, Piao Y, et al. Cellular source and molecular form of TNF specify its distinct functions in organization of secondary lymphoid organs. Blood. 2010 Nov 4;116(18):3456-64. doi: 10.1182/blood-2009-10-249177. Epub 2010 Jul 15. PubMed PMID: 20634375.
4. Karlsson MC, Guinamard R, Bolland S, Sankala M, Steinman RM, Ravetch JV. Macrophages control the retention and trafficking of B lymphocytes in the splenic marginal zone. J Exp Med. 2003 Jul 21;198(2):333-40. PubMed PMID: 12874264.
5. Kanayama N, Cascalho M, Ohmori H. Analysis of marginal zone B cell development in the mouse with limited B cell diversity: role of the antigen receptor signals in the recruitment of B cells to the marginal zone. J Immunol. 2005 Feb 1;174(3):1438-45. PubMed PMID: 15661902.
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10. Birjandi SZ, Ippolito JA, Ramadorai AK, Witte PL. Alterations in marginal zone macrophages and marginal zone B cells in old mice. J Immunol. 2011 Mar 15;186(6):3441-51. doi: 10.4049/jimmunol.1001271. Epub 2011 Feb 9. PubMed PMID: 21307289.
11. Bhattacharyya, S. et al. (2011) NFATc1 affects mouse splenic B cell function by controlling the calcineurin-NFAT signaling network. J Exp Med. Apr 4. [Epub ahead of print]
12. Jang IK, Cronshaw DG, Xie LK, Fang G, Zhang J, Oh H, et al. Growth-factor receptor-bound protein-2 (Grb2) signaling in B cells controls lymphoid follicle organization and germinal center reaction. Proc Natl Acad Sci U S A. 2011 May 10;108(19):7926-31. doi: 10.1073/pnas.1016451108. Epub 2011 Apr 20. PubMed PMID: 21508326.
13. Rehm A, Mensen A, Schradi K, Gerlach K, Wittstock S, Winter S, et al. Cooperative function of CCR7 and lymphotoxin in the formation of a lymphoma-permissive niche within murine secondary lymphoid organs. Blood. 2011 Jul 28;118(4):1020-33. doi: 10.1182/blood-2010-11-321265. Epub 2011 May 17. PubMed PMID: 21586747.
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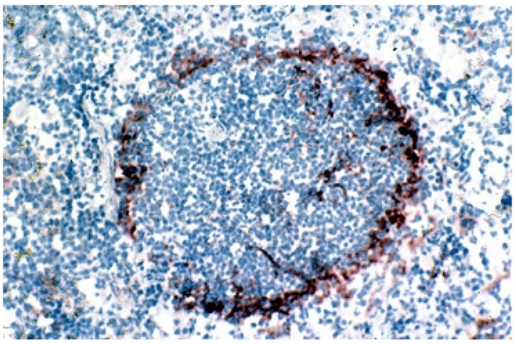
Protocols:

Protocol 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

Pictures:

Staining of mouse spleen using MOMA-1 Cat. SM066P. Note the typical staining of metallophilic macrophages in the marginal zone.



Staining of mouse spleen frozen section using MOMA-1 Cat. SM066P