

Mouse SPARC Alexa Fluor® 488-conjugated Antibody

Monoclonal Rat IgG_{2B} Clone # 124413

Catalog Number: IC942G 100 Tests

DESCRIPTION			
Species Reactivity	Mouse		
Specificity	Detects mouse SPARC/Osteonectin in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human SPARC is observed.		
Source	Monoclonal Rat IgG _{2B} Clone # 124413		
Purification	Protein A or G purified from hybridoma culture supernatant		
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse SPARC/Osteonectin Ala18-lle302 Accession # P07214		
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm		
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.		
	*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.		

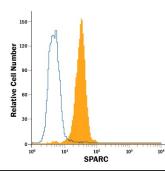
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	5 μL/10 ⁶ cells	See Below

DATA

Intracellular Staining by Flow Cytometry



Detection of SPARC in Balb/3T3 Mouse Cell Line by Flow Cytometry. Balb/3T3 mouse embryonic fibroblast cell line was stained with Rat Anti-Mouse SPARC Alexa Fluor® 488-conjugated Monoclonal Antibody (Catalog # IC942G, filled histogram) or isotype control antibody (Catalog # IC013G, open histogram). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for Staining Intracellular Molecules.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage

Protect from light. Do not freeze.

• 12 months from date of receipt, 2 to 8 °C as supplied.







Mouse SPARC Alexa Fluor® 488-conjugated Antibody

Monoclonal Rat IgG_{2B} Clone # 124413

Catalog Number: IC942G 100 Tests

BACKGROUND

SPARC, (Secreted Protein, Acidic and Rich in Cysteine) also known as Osteonectin or BM-40. It is the founding member of a family of secreted matricellular proteins with similar domain structure. The 295 amino acid (aa), 43-45 kDa protein contains a 46 aa N-terminal acidic region that binds calcium, a 23 aa follistatin-like domain containing Kazal-like sequences, and a 148 aa C-terminal extracellular calcium (EC) binding domain with two EF-hand motifs (1-5). Crystal structure shows that residues implicated in cell binding, inhibition of cell spreading, and disassembly of focal adhesions, cluster on one face of SPARC, while a collagen binding epitope, and an N-glycosylation site are opposite this face (6). SPARC is produced by fibroblasts, capillary endothelial cells, platelets and macrophages, especially in areas of tissue morphogenesis and remodeling (3, 7). It is also secreted by astrocytes where it participates in synapse formation (8). SPARC shows context-specific effects, but generally inhibits adhesion, membrane spreading and cell proliferation, while promoting collagen matrix formation (3-5). For endothelial cells, SPARC disrupts focal adhesions and binds and sequesters PDGF and VEGF (3-5). SPARC is abundantly expressed in bone, where it promotes osteoblast differentiation and inhibits adipogenesis (5, 9). SPARC is potentially cleaved by metalloproteinases, producing an angiogenic peptide that includes the copper-binding sequence KGHK (7). Paradoxically, SPARC is highly expressed in many tumor types, yet expression mainly decreases the likelihood of metastasis and confers sensitivity to chemotherapy and radiation (4, 10, 11). Stabilin-1, which is expressed on alternately activated macrophages, is the first SPARC receptor to be identified. It binds the SPARC EC domain and mediates endocytosis for degradation (12). Mature mouse SPARC shows 97%, 92%, 92%, 92% and 83% aa identity with rat, human, dog, cow and chick SPARC, respectively.

References:

- 1. Lankat-Buttgereit, B. et al. (1988) FEBS Lett. 236:352.
- 2. Bradshaw, A.D. (2012) Intl. J. Biochem. Cell Biol. 44:480.
- 3. Sage, H. et al. (1989) J. Cell Biol. 109:341.
- 4. Framson, P.E. and E.H. Sage (2004) J. Cell. Biochem. 92:679.
- Alford, A.I. and K.D. Hankenson (2006) Bone 38:749.
- Hohenester, E. et al. (1997) EMBO J. 16:3778.
- 7. Sage, E.H. et al. (2003) J. Biol. Chem. 278:37849
- 8. Jones, E.V. et al. (2008) J. Neurosci. 31:4154.
- Delany, A.M. et al. (2003) Endocrinology 144:2588.
- 10. Koblinski, J.E. et al. (2005) Cancer Res. 65:7370.
- 11. Tai, I.T. et al. (2005) J. Clin. Invest. 115:1492.
- 12. Kzhyshkowska, J. et al. (2006) J. Immunol. 176:5825.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.

