

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-Ile302 Accession # P07214
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
Formulation	Supplied 0.2 mg/mL 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	0.25-1 µg/10 ⁶ cells	Balb/3T3 mouse embryonic fibroblast cell line fixed with paraformaldehyde and permeabilized with saponin

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.

BACKGROUND

SPARC, an acronym for "secreted protein, acidic and rich in cysteine", is also known as osteonectin or BM-40 (1-5). It is the founding member of a family of secreted matricellular proteins with similar domain structure. The 302 amino acid (aa), 43 kDa protein contains a 17 aa signal sequence, an N-terminal acidic region that binds calcium, a follistatin domain containing Kazal-like sequences, and a 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). SPARC shows context-specific effects, but generally inhibits adhesion, spreading and proliferation, and promotes 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, 8). 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, 9, 10). 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 (11). 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. McVey, J.H. *et al.* (1988) J. Biol. Chem. **263**:11111.
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.
5. Alford, A.I. and K.D. Hankenson (2006) Bone **38**:749.
6. Hohenester, E. *et al.* (1997) EMBO J. **16**:3778.
7. Sage, E.H. *et al.* (2003) J. Biol. Chem. **278**:37849.
8. Delany, A.M. *et al.* (2003) Endocrinology **144**:2588.
9. Koblinski, J.E. *et al.* (2005) Cancer Res. **65**:7370.
10. Tai, I.T. *et al.* (2005) J. Clin. Invest. **115**:1492.
11. Kzhyshkowska, J. *et al.* (2006) J. Immunol. **176**:5825.

Mouse SPARC Alexa Fluor® 350-conjugated Antibody

Monoclonal Rat IgG_{2B} Clone # 124413

Catalog Number: IC942U
100 µg

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.