

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human SPARC/Osteonectin in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse SPARC/Osteonectin is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 122511
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human SPARC Ala18-Ile303 Accession # P09486
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

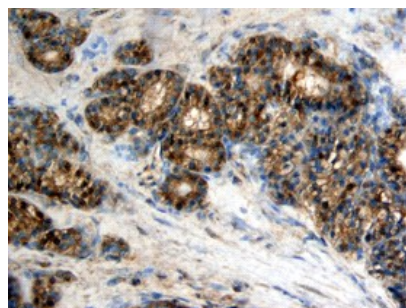
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Immunohistochemistry</b>	8-25 µg/mL	See Below
<b>Intracellular Staining by Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	MG-63 human osteosarcoma cell line fixed with paraformaldehyde and permeabilized with saponin

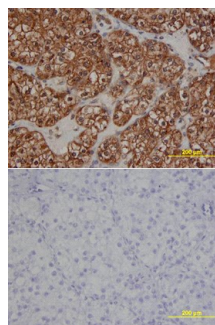
## DATA

### Immunohistochemistry



**SPARC/Osteonectin in Human Ovary.** SPARC/Osteonectin was detected in immersion fixed paraffin-embedded sections of human ovary using Human SPARC/Osteonectin Monoclonal Antibody (Catalog # MAB941) at 25 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

### Immunohistochemistry



**SPARC/Osteonectin in Human Ovary.** SPARC/Osteonectin was detected in immersion fixed paraffin-embedded sections of human ovarian array using Human SPARC/Osteonectin Monoclonal Antibody (Catalog # MAB941) at 25 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling when primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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 286 amino acid (aa), 43 kDa protein contains an N-terminal acidic region that binds calcium, a follistatin domain that contains Kazal-like sequences, and a C-terminal extracellular calcium (EC) binding domain with two EF-hand motifs (1-5). Crystal structure modeling 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 undergoing an endothelial to mesenchymal transition; its expression, however, mainly decreases the likelihood of metastasis and confers sensitivity to chemotherapy and radiation (4, 9-11). 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 human SPARC shows 92%, 92%, 97%, 99%, 96% and 85% aa identity with mouse, rat, canine, bovine, porcine and chick SPARC, respectively.

## References:

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