

Active Recombinant Mouse Sparc, His-tagged

Cat. No. Sparc-4030M Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Mouse Sparc (Ala18-Ile302) fused with 10His tag at Cterminal, was expressed in Mouse NSO Cells.

Species Mouse

Source Mammalian Cells

ProteinLength 18-302 a.a.

Description

SPARC, an acronym for “secreted protein, acidic and rich in cysteine”, is also known as osteonectin or BM40. 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 Nterminal acidic region that binds calcium, a follistatin domain containing Kazal-like sequences, and a Cterminal extracellular calcium (EC) binding domain with two EFhand motifs. 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 Nglycosylation site are opposite this face. SPARC is produced by fibroblasts, capillary endothelial cells, platelets and macrophages, especially in areas of tissue morphogenesis and remodeling. SPARC shows context-specific effects, but generally inhibits adhesion, spreading and proliferation, and promotes collagen matrix formation. For endothelial cells, SPARC disrupts focal adhesions and binds and sequesters PDGF and VEGF. SPARC is abundantly expressed in bone, where it promotes osteoblast differentiation and inhibits adipogenesis. SPARC is

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potentially cleaved by metalloproteinases, producing an angiogenic peptide that includes the copperbinding sequence KGHK. Paradoxically, SPARC is highly expressed in many tumor types, yet expression mainly decreases the likelihood of metastasis and confers sensitivity to chemotherapy and radiation. Stabilin1, 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. Mature mouse SPARC shows 97%, 92%, 92%, 92% and 83% aa identity with rat, human, dog, cow and chick SPARC, respectively.

Predicted N Terminal Ala18

Formulation Lyophilized from a 0.2 µ filtered solution in PBS.

Bio-activity Measured by its ability to inhibit the cell growth of Mv1Lu mink lung epithelial cells. The ED50 for this effect is typically 0.6 - 2.4 µg/mL. Optimal dilutions should be determined by each laboratory for each application.

Molecular Mass 34 kDa

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Storage Avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 3 months, -20 to -70 °C under sterile conditions after reconstitution.

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

GENE INFORMATION

Gene Name Sparc secreted acidic cysteine rich glycoprotein [Mus musculus(house mouse)]

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Official Symbol	Sparc
Synonyms	Sparc; secreted acidic cysteine rich glycoprotein; BM-40; AA517111; SPARC; ON; osteonectin; basement-membrane protein 40; secreted protein acidic and rich in cysteine
Gene ID	20692
mRNA Refseq	NM_009242
Protein Refseq	NP_033268
UniProt ID	P07214
Chromosome Location	11 B1; 11 33.04 cM
Pathway	Hemostasis; Platelet activation, signaling and aggregation; Platelet degranulation; Senescence and Autophagy
Function	calcium ion binding; extracellular matrix binding; metal ion binding

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