

## SPARC Human

**Description:** Osteonectin Human Recombinant fused with 6X His tag produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 295 amino acids and having a molecular mass of 34 kDa. The BM40 is purified by proprietary chromatographic techniques.

**Synonyms:** Osteonectin, ON, Basement-membrane protein 40, BM-40, SPARC, Secreted Protein acidic and Rich in Cysteine.

**Source:** Escherichia Coli.

**Physical Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**Amino Acid Sequence:**

MSYYHHHHHPQQEALPDETEVVEETVAEVTEVSVGANPVQVEVGEFDDGAEETEEVVVAENP  
CQNHCKHGKVCVCELDENNTPMCVCQDPTSCPAPIGEFEKVCSDNDNKTDFDSSCHFFATKCTLEGT  
KKGHKLHLDYIGPCKYIPCLDSELTEFPLMRDWLKNVLTLYERDEDNLLTKQKLRVKKIHEN  
EKRLEAGDHPVELLARDFEKNYNMYIFPVHWQFGQLDQHPIDGYLSHTELAPLRAPLIPMEH

**Purity:** Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

**Formulation:**

The SPARC (1 mg/ml) was lyophilized after extensive dialyses against 20mM PBS pH-7.4.

**Stability:**

Lyophilized Osteonectin although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BM-40 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Usage:**

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**Solubility:**

It is recommended to reconstitute the lyophilized SPARC in sterile 18M-cm H<sub>2</sub>O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

**Introduction:**

SPARC, an acronym for secreted protein, acidic and rich in cysteine, is also known as osteonectin or BM-40. It is the founding member of a family of secreted matricellular proteins with similar domain structure. The 303 amino acid, 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. 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

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