

DATASHEET

Version 20181206

SPARC, Human

Cat. No.: Z02804-1

Size: 1.0 mg

Synonyms: SPARC, Human;

Description:

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 adipogenesis.

Amino Acid Sequence:

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00001 MSYYHHHHH DYDIPTTENL YFQGAMGSAP QQEALPDETE
00041 VVEETVAEVT EVSVGANPVQ VEVGEFDDGA EETEEVVAE
00081 NPCQNHCKH GKVCELDENN TPMCVQDPT SCPAPIGEFE
00121 KVCSDNKTFF DSSCHFFATK CTLEGTKKGH KLHLDYIGPC
00161 KYIPPCLDSE LTFEPLMRD WLKNVLTLY ERDEDNNLLT
00201 EKQKLRVKKI HENEKRLKAG DHPVELLARD FEKNVNMVIF
00241 PVHWQFGQLD QHPIDGYLSH TELAPLRAPL IPMEHCTTRF
00281 FETCDLNDK YIALDEWAG FGKQKIDK DLVI
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Source: *E. coli*

Species: Human

Biological Activity: Fully biologically active when compared to standard. The ED₅₀ as determined by its ability to inhibit the cell growth of Mv1Lu mink lung epithelial cells is less than 3.0 µg/mL, corresponding to a specific activity of > 333 IU/mg.

Molecular Weight: Approximately 36.1 kDa, a single non-glycosylated polypeptide chain containing 314 amino acids, with expression vector sequence (containing 6 × His tag).

Formulation: Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4.

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

Reconstitution: We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

Purity: > 95 % by SDS-PAGE and HPLC analyses.

Endotoxin Level: Less than 1 EU/µg of rHuSPARC, His as determined by LAL method.

Storage: This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 °C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20 °C to -70 °C. Avoid repeated freeze/thaw cycles.