SANTA CRUZ BIOTECHNOLOGY, INC.

SPARC (AON-1): sc-33645

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

SPARC (for secreted protein acidic and rich in cysteine) is a phosphorylated, acidic, glycine-rich glycoprotein that is secreted by endothelial cells and is present in large amounts in the parietal endoderm of mouse embryos and in human placenta. It is identical to osteonectin, a protein important to bone calcification that is highly conserved between species. SPARC, which can be selectively expressed by the endothelium in response to certain types of injury, induces rounding in adherent endothelial cells *in vitro*. It regulates endothelial barrier function through F-Actin-dependent changes in cell shape, coincident with the appearance of intercellular gaps, which provide a paracellular pathway for extravasation of macromolecules.

REFERENCES

1. Termine, J.D., et al. 1981. Osteonectin, a bone-specific protein linking mineral to collagen. Cell 26: 99-105.
2. Findlay, D.M., et al. 1988. Isolation of the osteonectin gene: evidence that a variable region of the osteonectin molecule is encoded within one exon. Biochemistry 27: 1483-1489.

CHROMOSOMAL LOCATION

Genetic locus: SPARC (human) mapping to 5q33.1; Sparc (mouse) mapping to 11 B1.3.

SOURCE

SPARC (AON-1) is a mouse monoclonal antibody raised against SPARC from bone tissue of bovine origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SPARC (AON-1) is recommended for detection of SPARC of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

SPARC (AON-1) is also recommended for detection of SPARC in additional species, including bovine.

Suitable for use as control antibody for SPARC siRNA (h): sc-37166, SPARC siRNA (m): sc-41034, SPARC shRNA Plasmid (h): sc-37166-SH, SPARC shRNA Plasmid (m): sc-41034-SH, SPARC shRNA (h) Lentiviral Particles: sc-37166-V and SPARC shRNA (m) Lentiviral Particles: sc-41034-V.

Molecular Weight of SPARC: 43 kDa.

Positive Controls: A549 cell lysate: sc-2413, A-375 cell lysate: sc-3811 or U-251-MG whole cell lysate: sc-364176.

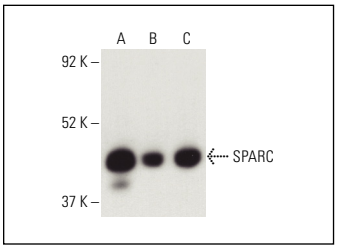
RESEARCH USE

For research use only, not for use in diagnostic procedures.

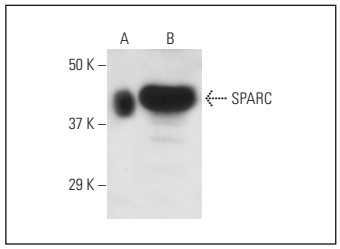
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SPARC (AON-1): sc-33645. Western blot analysis of SPARC expression in A-375 (**A**), BJ (**B**) and U-251-MG (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



SPARC (AON-1): sc-33645. Western blot analysis of human recombinant SPARC (**A**) and SPARC expression in A549 whole cell lysate (**B**).

SELECT PRODUCT CITATIONS

1. Delolme, F., et al. 2015. Proteolytic control of TGF-β co-receptor activity by BMP-1/tolloid-like proteases revealed by quantitative iTRAQ proteomics. Cell. Mol. Life Sci. 72: 1009-1027.
2. Schira, J., et al. 2015. Characterization of regenerative phenotype of unrestricted somatic stem cells (USSC) from human umbilical cord blood (hUCB) by functional secretome analysis. Mol. Cell. Proteomics 14: 2630-2643.
3. Qin, E.Y., et al. 2017. Neural precursor-derived pleiotrophin mediates subventricular zone invasion by glioma. Cell 170: 845-859.e19.
4. Giannasi, C., et al. 2019. Nitrogen containing bisphosphonates impair the release of bone homeostasis mediators and matrix production by human primary pre-osteoblasts. Int. J. Med. Sci. 16: 23-32.
5. Chen, S., et al. 2020. *In vitro* evaluation of a novel osteo-inductive scaffold for osteogenic differentiation of bone-marrow mesenchymal stem cells. J. Craniofac. Surg. 31: 577-582.
6. Mirza, S., et al. 2020. Bioactive gum arabic/κ-carrageenan-incorporated nano-hydroxyapatite nanocomposites and their relative biological functionalities in bone tissue engineering. ACS Omega 5: 11279-11290.
7. Conforti, F., et al. 2020. Paracrine SPARC signaling dysregulates alveolar epithelial barrier integrity and function in lung fibrosis. Cell Death Discov. 6: 54.
8. Chen, L., et al. 2021. CCAR2 promotes a malignant phenotype of osteosarcoma through Wnt/β-catenin-dependent transcriptional activation of SPARC. Biochem. Biophys. Res. Commun. 580: 67-73.

CONJUGATES

See **SPARC (D-2): sc-398419** for SPARC antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.