

BSPII (ID1.2): sc-73497

BACKGROUND

BSPII (bone sialoprotein II), also known as IBSP (integrin-binding sialoprotein), BSP (bone sialoprotein), BNSP or SP-II, is a secreted acidic glycosylated, sulfated and phosphorylated protein that is synthesized by osteoblasts, osteocytes, osteoclasts, hypertrophic chondrocytes and other skeletal-associated cell types. BSPII is a major structural protein in bone matrix and makes up approximately 12% of the non-collagenous proteins in human bone. Noncollagenous proteins are believed to function in the regulation of bone mineralization. BSPII is capable of nucleating hydroxyapatite crystal formation and, therefore, is thought to play an important role in initial mineralization of bone, cementum and dentin. Belonging to the SIBLING family of proteins, BSPII contains an RGD sequence which recognizes the Vitronectin receptor Integrin αV and may participate in mediating cell attachment. In addition, BSPII is expressed in various cancers, including lung, thyroid, breast and prostate cancers.

REFERENCES

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3. Kim, R.H., et al. 1994. Characterization of the human bone sialoprotein (BSP) gene and its promoter sequence. *Matrix Biol.* 14: 31-40.
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5. Inanc, B., et al. 2007. Effect of osteogenic induction on the *in vitro* differentiation of human embryonic stem cells cocultured with periodontal ligament fibroblasts. *Artif. Organs* 31: 792-800.
6. Knabe, C., et al. 2008. Effect of β -tricalcium phosphate particles with varying porosity on osteogenesis after sinus floor augmentation in humans. *Biomaterials* 29: 2249-2258.
7. Shimonishi, M., et al. 2008. Mutual induction of non-collagenous bone proteins at the interface between epithelial cells and fibroblasts from human periodontal ligament. *J. Periodontal Res.* 43: 64-75.
8. Ogata, Y. 2008. Bone sialoprotein and its transcriptional regulatory mechanism. *J. Periodontal Res.* 43: 127-135.
9. Bellahcène, A., et al. 2008. Small integrin-binding ligand N-linked glycoproteins (SIBLINGs): multifunctional proteins in cancer. *Nat. Rev. Cancer* 8: 212-226.

CHROMOSOMAL LOCATION

Genetic locus: IBSP (human) mapping to 4q22.1.

SOURCE

BSPII (ID1.2) is a mouse monoclonal antibody raised against bone sialoprotein isolated from bone tissue of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml TBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

BSPII (ID1.2) is recommended for detection of recombinant and native BSPII of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with human Osteonectin or human Osteopontin.

Suitable for use as control antibody for BSPII siRNA (h): sc-105128, BSPII shRNA Plasmid (h): sc-105128-SH and BSPII shRNA (h) Lentiviral Particles: sc-105128-V.

Molecular Weight of BSPII: 35 kDa.

SELECT PRODUCT CITATIONS

1. Zhang, Z. and Shively, J.E. 2010. Generation of novel bone forming cells (monosteophils) from the cathelicidin-derived peptide LL-37 treated monocytes. *PLoS ONE* 5: e13985.
2. Chaddad, H., et al. 2017. Combining 2D angiogenesis and 3D osteosarcoma microtissues to improve vascularization. *Exp. Cell Res.* 360: 138-145.
3. Freeman, F.E., et al. 2017. Mimicking the biochemical and mechanical extracellular environment of the endochondral ossification process to enhance the *in vitro* mineralization potential of human mesenchymal stem cells. *Tissue Eng. Part A* 23: 1466-1478.
4. Strub, M., et al. 2018. Maxillary bone regeneration based on nanoreservoirs functionalized ϵ -polycaprolactone biomembranes in a mouse model of jaw bone lesion. *Biomed Res. Int.* 2018: 7380389.
5. Zhang, Y., et al. 2019. PLEXIN-B2 promotes the osteogenic differentiation of human bone marrow mesenchymal stem cells via activation of the RhoA signaling pathway. *Cell. Signal.* 62: 109343.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.