

BSPII (LFMb-24): sc-73634

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 noncollagenous 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 α V and may participate in mediating cell attachment. In addition, BSPII is expressed in various cancers, including lung, thyroid, breast and prostate cancers.

REFERENCES

1. Braten, M., et al. 1990. Effects of medullary reaming on fracture healing. Tibial osteotomies in rabbits. *Acta Orthop. Scand.* 61: 327-329.
2. Goold, R.D., et al. 1993. The development of sequence-tagged sites for human chromosome 4. *Hum. Mol. Genet.* 2: 1271-1288.
3. Kim, R.H., et al. 1994. Characterization of the human bone sialoprotein (BSP) gene and its promoter sequence. *Matrix Biol.* 14: 31-40.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 147563. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

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

SOURCE

BSPII (LFMb-24) is a mouse monoclonal antibody raised against amino acids 131-442 of BSPII of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BSPII (LFMb-24) is available conjugated to agarose (sc-73634 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-73634 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-73634 PE), fluorescein (sc-73634 FITC), Alexa Fluor[®] 488 (sc-73634 AF488), Alexa Fluor[®] 546 (sc-73634 AF546), Alexa Fluor[®] 594 (sc-73634 AF594) or Alexa Fluor[®] 647 (sc-73634 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-73634 AF680) or Alexa Fluor[®] 790 (sc-73634 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

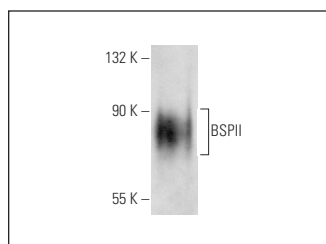
APPLICATIONS

BSPII (LFMb-24) is recommended for detection of BSPII of human and monkey origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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.

DATA



BSPII (LFMb-24): sc-73634. Western blot analysis of human recombinant IBSP/Sialoprotein II.

SELECT PRODUCT CITATIONS

1. Pesesse, L., et al. 2013. Consequences of chondrocyte hypertrophy on osteoarthritic cartilage: potential effect on angiogenesis. *Osteoarthritis Cartilage* 21: 1913-1923.
2. Pesesse, L., et al. 2014. Bone sialoprotein as a potential key factor implicated in the pathophysiology of osteoarthritis. *Osteoarthritis Cartilage* 22: 547-556.
3. Ozeki, N., et al. 2016. Polyphosphate-induced matrix metalloproteinase-13 is required for osteoblast-like cell differentiation in human adipose tissue derived mesenchymal stem cells. *Biosci. Trends* 10: 365-371.
4. Díaz-Martín, R.D., et al. 2021. Short exposure to glyphosate induces locomotor, craniofacial, and bone disorders in zebrafish (*Danio rerio*) embryos. *Environ. Toxicol. Pharmacol.* 87: 103700.
5. Cifuentes-Mendiola, S.E., et al. 2022. Docosahexaenoic acid improves altered mineralization proteins, the decreased quality of hydroxyapatite crystals and suppresses oxidative stress induced by high glucose. *Exp. Ther. Med.* 23: 235.
6. Burger, M.G., et al. 2022. Robust coupling of angiogenesis and osteogenesis by VEGF-decorated matrices for bone regeneration. *Acta Biomater.* 149: 111-125.
7. Alipour, M., et al. 2023. Synthesis, characterization, and evaluation of hesperetin nanocrystals for regenerative dentistry. *Sci. Rep.* 13: 2076.

STORAGE

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