SANTA CRUZ BIOTECHNOLOGY, INC.

BSPII siRNA (m): sc-141764

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 chondroctyes 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 αV 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/
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.

CHROMOSOMAL LOCATION

Genetic locus: Ibsp (mouse) mapping to 5 E5.

PRODUCT

BSPII siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BSPII shRNA Plasmid (m): sc-141764-SH and BSPII shRNA (m) Lentiviral Particles: sc-141764-V as alternate gene silencing products.

For independent verification of BSPII (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141764A, sc-141764B and sc-141764C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

BSPII siRNA (m) is recommended for the inhibition of BSPII expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

BSPII (LFMb-25): sc-73630 is recommended as a control antibody for monitoring of BSPII gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BSPII gene expression knockdown using RT-PCR Primer: BSPII (m)-PR: sc-141764-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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