

BMP-1 siRNA (h): sc-39736

BACKGROUND

Bone morphogenic proteins (BMPs) are members of the TGF β superfamily. BMPs are involved in the induction of cartilage and bone formation. *In vivo* studies have shown that BMP-2 (also designated BMP-2A) and BMP-3 can independently induce cartilage formation. BMP-1 is a metalloprotease that plays important roles in regulating the deposition of fibrous extracellular matrix in vertebrates, including provision of the procollagen C-proteinase activity that processes the major fibrillar collagens I-III. Smad3 association with the TGF β receptor complex and Smad1 translocation to the nucleus are observed after the addition of BMP-4 (also designated BMP-2B), suggesting that BMP-4 may play a role in activation of the Smad pathway. BMP-5, BMP-6 and BMP-7 all share high sequence homology with BMP-2, indicating that they each may be able to induce cartilage formation. BMP-8 (also designated OP-2) is thought to be involved in early development, as detectable expression has not been found in adult organs. Human BMP-1 splice variants occur between residues 703 and 986 and include: BMP1-1, BMP1-4, BMP1-5, BMP1-6 and BMP1-7.

REFERENCES

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5. Gitelman, S.E., et al. 1994. Recombinant Vgr-1/BMP-6-expressing tumors induce fibrosis and endochondral bone formation *in vivo*. *J. Cell Biol.* 126: 1595-1609.
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7. Zhang, Y., et al. 1996. Receptor-associated Mad homologues synergize as effectors of the TGF- β response. *Nature* 383: 168-172.
8. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGF- β superfamily member. *Nature* 387: 83-90.
9. Janitz, M., et al. 1998. Three alternatively spliced variants of the gene coding for the human bone morphogenetic protein-1. *J. Mol. Med.* 76: 141-146.

CHROMOSOMAL LOCATION

Genetic locus: BMP1 (human) mapping to 8p21.3.

PROTOCOLS

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

PRODUCT

BMP-1 siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BMP-1 shRNA Plasmid (h): sc-39736-SH and BMP-1 shRNA (h) Lentiviral Particles: sc-39736-V as alternate gene silencing products.

For independent verification of BMP-1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39736A, sc-39736B and sc-39736C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

BMP-1 siRNA (h) is recommended for the inhibition of BMP-1 expression in human 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 μ M in 66 μ l. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BMP-1 gene expression knockdown using RT-PCR Primer: BMP-1 (h)-PR: sc-39736-PR (20 μ l, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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