

BAMBI siRNA (h): sc-60243

BACKGROUND

BAMBI (BMP and activin membrane-bound inhibitor homolog, NMA), also designated non-metastatic gene A protein, is a membrane spanning glycoprotein that acts as a negative regulator of TGF β signaling during development. The BAMBI family of proteins are related to type I TGF β receptor family, however, BAMBI is a pseudoreceptor that lacks an intracellular serine/threonine kinase domain. BAMBI transcription regulation is under the influence of β -catenin, BMP, Smad3 and Smad4. BAMBI expression can increase in colorectal and hepatocellular carcinomas relative to non-cancerous tissues. BAMBI is expressed at high levels during odontogenesis. BAMBI is coexpressed with Bmp-4 during early *Xenopus* embryogenesis and can be detected in poorly metastatic human melanoma cell lines.

REFERENCES

1. Polushkin, B.V. 1968. On the significance of mast cells in the calcification of tissues during calciphylaxis. *Ark. Patol.* 30: 45-49.
2. Knight, C., et al. 2001. Cloning, characterization, and tissue expression pattern of mouse Nma/BAMBI during odontogenesis. *J. Dent. Res.* 80: 1895-1902.
3. Grotewold, L., et al. 2001. BAMBI is coexpressed with Bmp-4 during mouse embryogenesis. *Mech. Dev.* 100: 327-330.
4. Loveland, K.L., et al. 2003. Expression of BAMBI is widespread in juvenile and adult rat tissues and is regulated in male germ cells. *Endocrinology* 144: 4180-4186.
5. Sekiya, T., et al. 2004. Transcriptional regulation of the TGF β pseudoreceptor BAMBI by TGF β signaling. *Biochem. Biophys. Res. Commun.* 320: 680-684.

CHROMOSOMAL LOCATION

Genetic locus: BAMBI (human) mapping to 10p12.1.

PRODUCT

BAMBI 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 BAMBI shRNA Plasmid (h): sc-60243-SH and BAMBI shRNA (h) Lentiviral Particles: sc-60243-V as alternate gene silencing products.

For independent verification of BAMBI (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-60243A, sc-60243B and sc-60243C.

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

BAMBI siRNA (h) is recommended for the inhibition of BAMBI 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.

GENE EXPRESSION MONITORING

BAMBI (3B7): sc-100681 is recommended as a control antibody for monitoring of BAMBI 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 BAMBI gene expression knockdown using RT-PCR Primer: BAMBI (h)-PR: sc-60243-PR (20 μ l, 422 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2014. Transcriptional repression of the transforming growth factor β (TGF β) pseudoreceptor BMP and activin membrane-bound inhibitor (BAMBI) by nuclear factor κ B (NF κ B) p50 enhances TGF β signaling in hepatic stellate cells. *J. Biol. Chem.* 289: 7082-7091.
2. Tao, L., et al. 2018. MicroRNA-942 mediates hepatic stellate cell activation by regulating BAMBI expression in human liver fibrosis. *Arch. Toxicol.* 92: 2935-2946.
3. Hoang, N.T.D., et al. 2022. BMP and activin membrane-bound inhibitor regulate connective tissue growth factor controlling mesothelioma cell proliferation. *BMC Cancer* 22: 984.

RESEARCH USE

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