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SANTA CRUZ BIOTECHNOLOGY, INC.

BVES siRNA (r): sc-270037

BACKGROUND

Blood vessel epicardial substance (BVES), also designated Popeye protein 1, is a transmembrane protein that plays a role in cell-cell interactions and adhesion, specifically at tight junctions. BVES is composed of an extracellular amino terminus, three transmembrane domains and a cytoplasmic carboxyl terminus. It is expressed in the developing coronary vascular system, specifically in the proepicardium, migrating epithelial epicardium, delaminated vasculogenic mesenchyme and vascular smooth muscle cells, where it functions to direct development in heart, epithelial and muscle cells during embryogenesis. BVES accumulates at points of cell/cell contact, such as filopodia and cell borders, and promotes adhesion prior to the arrival of E-cadherin. It also regulates epithelial integrity during cell movement and growth.

REFERENCES

1. Reese, D.E., et al. 1999. BVES: A novel gene expressed during coronary blood vessel development. Dev. Biol. 209: 159-171.
2. Wada, A.M., et al. 2001. BVES: prototype of a new class of cell adhesion molecules expressed during coronary artery development. Development 128: 2085-2093.
3. Osler, M.E. and Bader, D.M. 2004. BVES expression during avian embryogenesis. Dev. Dyn. 229: 658-667.
4. Vasavada, T.K., et al. 2004. Developmental expression of Pop1/BVES. J. Histochem. Cytochem. 52: 371-377.
5. Brand, T. 2005. The Popeye domain-containing gene family. Cell Biochem. Biophys. 43: 95-103.
6. Osler, M.E., et al. 2005. BVES modulates epithelial integrity through an interaction at the tight junction. J. Cell Sci. 118: 4667-4678.
7. von Kodolitsch, Y., et al. 2005. Coronary artery anomalies. Part I: recent insights from molecular embryology. Z. Kardiol. 93: 929-937.
8. Osler, M.E., et al. 2006. BVES, a member of the Popeye domain-containing gene family. Dev. Dyn. 235: 586-593.
9. Ripley, A.N., et al. 2006. xBVES is a regulator of epithelial movement during early *Xenopus laevis* development. Proc. Natl. Acad. Sci. USA 103: 614-619.

CHROMOSOMAL LOCATION

Genetic locus: Bves (rat) mapping to 20q13.

PRODUCT

BVES siRNA (r) 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 BVES shRNA Plasmid (r): sc-270037-SH and BVES shRNA (r) Lentiviral Particles: sc-270037-V as alternate gene silencing products.

For independent verification of BVES (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270037A, sc-270037B and sc-270037C.

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

BVES siRNA (r) is recommended for the inhibition of BVES expression in rat 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

BVES (E-3): sc-374081 is recommended as a control antibody for monitoring of BVES 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 BVES gene expression knockdown using RT-PCR Primer: BVES (r)-PR: sc-270037-PR (20 µl). 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.

PROTOCOLS

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