SANTA CRUZ BIOTECHNOLOGY, INC.

Bex1 siRNA (m): sc-60270

BACKGROUND

The brain-expressed X-linked (Bex) family of proteins is expressed in the central nervous system, with highest levels detected in cerebellum, temporal lobe and pituitary tissues. Bex1 plays an important role in neuronal differentiation in response to nerve growth factor (NGF), as well as in cell cycle progression. Bex1 is a highly ubiquitinated protein and acts as a link between the cell cycle and neurotrophic factor signaling. The Bex1 gene is initially transcribed at the two-cell stage and is transiently induced at the eight-cell stage. At the blastocyst stage, it again increases in transcription, finally decreasing in the late blastocyst stage. Bex1 is widely expressed outside of the central nervous system with high expression in the liver. Bex1 and Bex2 shuttle between the cytoplasm and the nucleus. Though the role of Bex1 is largely unknown, it may function by coordinating internal cellular states with the ability of cells to respond to external signals.

REFERENCES

1. Brown, A.L. and Kay, G.F. 1999. Bex1, a gene with increased expression in parthenogenetic embryos, is a member of a novel gene family on the mouse X chromosome. Hum. Mol. Genet. 8: 611-619.
2. Williams, J.W., et al. 2002. Trophectoderm-specific expression of the X-linked Bex1/Rex3 gene in preimplantation stage mouse embryos. Mol. Reprod. Dev. 61: 281-287.
3. Yang, Q.S., et al. 2002. Cloning and expression pattern of a spermatogenesis-related gene, BEX1, mapped to chromosome Xq22. Biochem. Genet. 40: 1-12.
4. Alvarez, E., et al. 2005. Characterization of the Bex gene family in humans, mice, and rats. Gene 357: 18-28.
5. Han, C., et al. 2005. Human Bex2 interacts with LMO2 and regulates the transcriptional activity of a novel DNA-binding complex. Nucleic Acids Res. 33: 6555-6565.
6. Koo, J.H., et al. 2005. Immunolocalization of Bex protein in the mouse brain and olfactory system. J. Comp. Neurol. 487: 1-14.
7. Bernstein, S.L., et al. 2006. Analysis of optic nerve stroke by retinal Bex expression. Mol. Vis. 12: 147-155.
8. Foltz, G., et al. 2006. Genome-wide analysis of epigenetic silencing identifies Bex1 and Bex2 as candidate tumor suppressor genes in malignant glioma. Cancer Res. 66: 6665-6674.
9. Vilar, M., et al. 2006. Bex1, a novel interactor of the p75 neurotrophin receptor, links neurotrophin signaling to the cell cycle. EMBO J. 25: 1219-1230.

CHROMOSOMAL LOCATION

Genetic locus: Bex1 (mouse) mapping to X F1.

PROTOCOLS

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

PRODUCT

Bex1 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 Bex1 shRNA Plasmid (m): sc-60270-SH and Bex1 shRNA (m) Lentiviral Particles: sc-60270-V as alternate gene silencing products.

For independent verification of Bex1 (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-60270A, sc-60270B and sc-60270C.

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

Bex1 siRNA (m) is recommended for the inhibition of Bex1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bex1 gene expression knockdown using RT-PCR Primer: Bex1 (m)-PR: sc-60270-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.