SANTA CRUZ BIOTECHNOLOGY, INC.

BI-1 siRNA (r): sc-270613

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The Power to Question

BACKGROUND

BI-1 (Bax inhibitor 1), also designated testis enhanced gene transcript (TEGT), is a regulator of cell death pathways controlled by Bcl-2 and Bax. BI-1 is an integral membrane protein containing six membrane-spanning segments and is predominantly localized to intracellular membranes, similar to Bcl-2 family proteins. The human protein contains 237 amino acids. BI-1 can interact with Bcl-2 and Bcl-x_L. When overexpressed in mammalian cells, BI-1 suppresses apoptosis induced by Bax, etoposide, staurosporine and growth factor deprivation. BI-1 antisense induces apoptosis.

REFERENCES

1. Cowling, R.T., et al. 1998. Preliminary characterization of the protein encoded by human testis-enhanced gene transcript (TEGT). Mol. Membr. Biol. 15: 177-187.
2. Xu, Q., et al. 1998. Bax inhibitor-1, a mammalian apoptosis suppressor identified by functional screening in yeast. Mol. Cell 1: 337-346.
3. Jean, J.C., et al. 1999. The Bax inhibitor-1 gene is differentially regulated in adult testis and developing lung by two alternative TATA-less promoters. Genomics 57: 201-208.
4. Grzmil, M., et al. 2003. Bax inhibitor-1 is overexpressed in prostate cancer and its specific down-regulation by RNA interference leads to cell death in human prostate carcinoma cells. Am. J. Pathol. 163: 543-552.
5. Chae, H.J., et al. 2004. BI-1 regulates an apoptosis pathway linked to endoplasmic reticulum stress. Mol. Cell 15: 355-366.
6. Huckelhoven, R. 2004. Bax inhibitor-1, an ancient cell death suppressor in animals and plants with prokaryotic relatives. Apoptosis 9: 299-307.
7. Westphalen, B.C., et al. 2005. BI-1 protects cells from oxygen glucose deprivation by reducing the calcium content of the endoplasmic reticulum. Cell Death Differ. 12: 304-306.
8. Bailly-Maitre, B., et al. 2007. Mice lacking BI-1 gene show accelerated liver regeneration. Cancer Res. 67: 1442-1450.
9. Ihara-Ohori, Y., et al. 2007. Cell death suppressor *Arabidopsis* Bax inhibitor-1 is associated with calmodulin binding and ion homeostasis. Plant Physiol. 143: 650-660.

CHROMOSOMAL LOCATION

Genetic locus: Tmbim6 (rat) mapping to 7q36.

PRODUCT

BI-1 siRNA (r) is a pool of 2 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 BI-1 shRNA Plasmid (r): sc-270613-SH and BI-1 shRNA (r) Lentiviral Particles: sc-270613-V as alternate gene silencing products.

For independent verification of BI-1 (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-270613A and sc-270613B.

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

BI-1 siRNA (r) is recommended for the inhibition of BI-1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BI-1 gene expression knockdown using RT-PCR Primer: BI-1 (r)-PR: sc-270613-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Doycheva, D., et al. 2019. Adenoviral-TMBIM6 vector attenuates ER stress-induced apoptosis in a neonatal hypoxic-ischemic rat model. Dis. Model. Mech. 12 pii: dmm040352.

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.