SANTA CRUZ BIOTECHNOLOGY, INC.

Bim siRNA (h): sc-29802

BACKGROUND

Pro-apototic Bcl-2 family members promote cell death by neutralizing their anti-apoptotic relatives, which otherwise maintain cell viability by regulating caspase activity. Bim belongs to the BH3-only subgroup of Bcl-2 related proteins and exists in three distinct isoforms, Bim_S (short), Bim_L (long) and Bim_{EL} (extra long). ERK1/2 phosphorylates Bim_{EL}, resulting in rapid degradation of the isoform via the proteasome pathway. At least three sites for ERK1/2 phosphorylation exist on Bim_{EL}, whereas ERK1/2 does not effect Bim_S or Bim_L, implying a unique role for Bim_{EL} in cell survival signaling.

CHROMOSOMAL LOCATION

Genetic locus: BCL2L11 (human) mapping to 2q13.

PRODUCT

Bim siRNA (h) is a target-specific 19-25 nt siRNA 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 Bim shRNA Plasmid (h): sc-29802-SH and Bim shRNA (h) Lentiviral Particles: sc-29802-V as alternate gene silencing products.

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

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

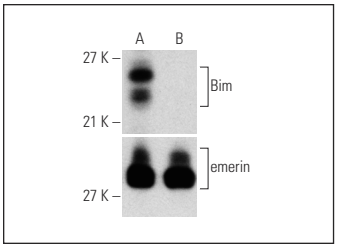
GENE EXPRESSION MONITORING

Bim (H-5): sc-374358 is recommended as a control antibody for monitoring of Bim 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bim gene expression knockdown using RT-PCR Primer: Bim (h)-PR: sc-29802-PR (20 µl, 329 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Bim siRNA (h): sc-29802. Western blot analysis of Bim expression in non-transfected control (**A**) and Bim siRNA transfected (**B**) HeLa cells. Blot probed with Bim (H-191): sc-11425. emerin (H-12): sc-25284 used as specificity and loading control.

SELECT PRODUCT CITATIONS

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3. Carbajo-Pescador, S., et al. 2013. Melatonin induces transcriptional regulation of Bim by FoxO3a in Hep G2 cells. Br. J. Cancer 108: 442-449.
4. Jin, H.O., et al. 2014. Blockage of Stat3 enhances the sensitivity of NSCLC cells to PI3K/mTOR inhibition. Biochem. Biophys. Res. Commun. 444: 502-508.
5. Liu, R., et al. 2015. The miR-24-Bim pathway promotes tumor growth and angiogenesis in pancreatic carcinoma. Oncotarget 6: 43831-43842.
6. Zhang, H., et al. 2016. Onco-miR-24 regulates cell growth and apoptosis by targeting BCL2L11 in gastric cancer. Protein Cell 7: 141-151.
7. Kim, B.R., et al. 2019. Genipin enhances the therapeutic effects of oxaliplatin by upregulating Bim in colorectal cancer. Mol. Cancer Ther. 18: 751-761.
8. Wang, H., et al. 2019. LINC00261 functions as a competing endogenous RNA to regulate BCL2L11 expression by sponging miR-132-3p in endometriosis. Am. J. Transl. Res. 11: 2269-2279.
9. Song, T.H., et al. 2019. Dendrobine targeting JNK stress signaling to sensitize chemotoxicity of cisplatin against non-small cell lung cancer cells *in vitro* and *in vivo*. Phytomedicine 53: 18-27.

RESEARCH USE

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