SANTA CRUZ BIOTECHNOLOGY, INC.

Bmf siRNA (h): sc-45930

BACKGROUND

The BH3-only proteins, which include Blk, Bad, Bik, Hrk, Bid, Bim, NOXA, PUMA and Bmf, are proapoptotic members of the Bcl-2 family. Bcl-2 modifying factor (Bmf) is a BH3-only protein that binds prosurvival Bcl-2 family members to initiate apoptosis. Bmf is sequestered to Myosin V motors on Actin in the cytoskeleton by associating with Dynein light chain 2 (DLC2) homodimers. If the cell undergoes loss of attachment (anoikis), the cytoskeleton is disrupted and Bmf is released from DLC2. Bmf then translocates to the mitochondria, where Bcl-2 (an anti-apoptotic family member) is sequestered. The BH3 domain of Bmf facilitates binding to a hydrophobic groove on the surface of Bcl-2. Binding results in a caspase cascade leading to apoptosis. Bmf is widely expressed in tissues such as pancreas, liver and kidney, and in hematopoietic tissues. The gene encoding Bmf maps to chromosome 15q15.1.

REFERENCES

1. Bouillet, P., et al. 1999. Proapoptotic Bcl-2 relative Bim required for certain apoptotic responses, leukocyte homeostasis and to preclude autoimmunity. Science 286: 1735-1738.
2. Huang, D.C. and Strasser, A. 2000. BH3-only proteins-essential initiators of apoptotic cell death. Cell 103: 839-842.
3. Naisbitt, S., et al. 2000. Interaction of the postsynaptic density-95/guanylate kinase domain-associated protein complex with a light chain of Myosin V and Dynein. J. Neurosci. 20: 4524-4534.
4. Hunt, A. and Evan, G. 2001. Apoptosis: till death do us part. Science 293: 1784-1785.
5. Puthalakath, H., et al. 2001. Bmf: a proapoptotic BH3-only protein regulated by interaction with the Myosin V Actin motor complex, activated by anoikis. Science 293: 1829-1832.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606266. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: BMF (human) mapping to 15q15.1.

PRODUCT

Bmf 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bmf shRNA Plasmid (h): sc-45930-SH and Bmf shRNA (h) Lentiviral Particles: sc-45930-V as alternate gene silencing products.

For independent verification of Bmf (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-45930A, sc-45930B and sc-45930C.

PROTOCOLS

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bmf gene expression knockdown using RT-PCR Primer: Bmf (h)-PR: sc-45930-PR (20 µl, 570 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jiang, S., et al. 2023. MicroRNA-640 inhibition enhances the chemosensitivity of human glioblastoma cells to temozolomide by targeting Bcl-2 modifying factor. Biochem. Genet. 61: 538-550.

RESEARCH USE

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