SANTA CRUZ BIOTECHNOLOGY, INC.

NOXA siRNA (m): sc-37306

BACKGROUND

Members of the Bcl-2 family of proteins interact to regulate programmed cell death (apoptosis) under a broad range of physiological conditions. Bcl-2, Bcl-x_L and several related proteins inhibit apoptosis, whereas other members of the Bcl-2 family, such as Bax and Bak, enhance cell death. NOXA, a pro-apoptotic member of the Bcl-2 family, contains the Bcl-2 homology 3 (BH3) region, but does not contain other BH domains. Murine cells constitutively express NOXA mRNA in small amounts in various organs; X-ray irradiation increases NOXA mRNA and protein expression levels. In human cells, NOXA, alternatively designated PMA-induced protein 1 or APR, displays high expression in the adult T cell leukemia cell line IKD, where it may function as an immediate-early-response gene. The NOXA protein selectively localizes to mitochondria.

REFERENCES

1. Nunez, G., et al. 1990. Deregulated Bcl-2 gene expression selectively prolongs survival of growth factor-deprived hemopoietic cell lines. J. Immunol. 144: 3602-3610.
2. Hijikata, M., et al. 1990. Molecular cloning and characterization of a cDNA for a novel phorbol-12-myristate-13-acetate-responsive gene that is highly expressed in an adult T cell leukemia cell line. J. Virol. 64: 4632-4639.
3. Hockenbery, D.M., et al. 1991. Bcl-2 protein is topographically restricted in tissues characterized by apoptotic cell death. Proc. Natl. Acad. Sci. USA 88: 6961-6965.
4. Oltvai, Z.N., et al. 1993. Bcl-2 heterodimerizes *in vivo* with a conserved homolog, Bax, that accelerates programmed cell death. Cell 74: 609-619.

CHROMOSOMAL LOCATION

Genetic locus: Pmaip1 (mouse) mapping to 18 E1.

PRODUCT

NOXA 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 NOXA shRNA Plasmid (m): sc-37306-SH and NOXA shRNA (m) Lentiviral Particles: sc-37306-V as alternate gene silencing products.

For independent verification of NOXA (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-37306A, sc-37306B and sc-37306C.

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

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

GENE EXPRESSION MONITORING

NOXA (114C307): sc-56169 is recommended as a control antibody for monitoring of NOXA 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 NOXA gene expression knockdown using RT-PCR Primer: NOXA (m)-PR: sc-37306-PR (20 µl, 587 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, J.Y., et al. 2017. Pro-apoptotic NOXA is involved in ablative focal irradiation-induced lung injury. J. Cell. Mol. Med. 21: 711-719.
2. Selimovic, D., et al. 2019. Tumor necrosis factor-α triggers opposing signals in head and neck squamous cell carcinoma and induces apoptosis via mitochondrial- and non-mitochondrial-dependent pathways. Int. J. Oncol. 55: 1324-1338.

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.