SANTA CRUZ BIOTECHNOLOGY, INC.

AIF siRNA (m): sc-29194

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The Power to Question

BACKGROUND

A key event in the apoptotic process is the opening of the mitochondrial permeability transition pore, an event that is regulated by Bcl-2 family proteins, resulting in the release of several proteins from the mitochondrial intermembrane space. Several of these proteins participate in apoptosis, including cytochrome c, procaspases 2, 3, and 9, and AIF (apoptosis-inducing factor). AIF has been shown to cause DNA fragmentation and chromatin condensation and to induce the release of cytochrome c and caspase-9 from mitochondria. Bcl-2 overexpression has been shown to prevent the release of AIF from mitochondria, but not to block its apoptogenic activity.

CHROMOSOMAL LOCATION

Genetic locus: Aifm1 (mouse) mapping to X A5.

PRODUCT

AIF siRNA (m) is a pool of 4 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 AIF shRNA Plasmid (m): sc-29194-SH and AIF shRNA (m) Lentiviral Particles: sc-29194-V as alternate gene silencing products.

For independent verification of AIF (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-29194A, sc-29194B, sc-29194C and sc-29194D.

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

AIF siRNA (m) is recommended for the inhibition of AIF 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

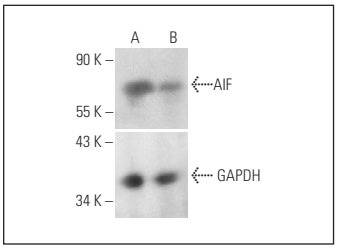
AIF (E-1): sc-13116 is recommended as a control antibody for monitoring of AIF gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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 AIF gene expression knockdown using RT-PCR Primer: AIF (m)-PR: sc-29194-PR (20 µl, 485 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



AIF siRNA (m): sc-29194. Western blot analysis of AIF expression in non-transfected control (**A**) and AIF siRNA transfected (**B**) CTTL-2 cells. Blot probed with AIF (D-20): sc-9416. GAPDH (FL-335): sc-25778 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Seth, R., et al. 2005. p53-dependent caspase-2 activation in mitochondrial release of apoptosis-inducing factor and its role in renal tubular epithelial cell injury. J. Biol. Chem. 280: 31230-31239.
2. Chang, C.P., et al. 2007. Concanavalin A induces autophagy in hepatoma cells and has a therapeutic effect in a murine *in situ* hepatoma model. Hepatology 45: 286-296.
3. Lee, C.T., et al. 2021. Bisphenol a induces autophagy defects and AIF-dependent apoptosis via HO-1 and AMPK to degenerate N2a neurons. Int. J. Mol. Sci. 22: 10948.

RESEARCH USE

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