SANTA CRUZ BIOTECHNOLOGY, INC.

Bcl-2 siRNA (m): sc-29215

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The Power to Question

BACKGROUND

Bcl-2 is one among many key regulators of apoptosis, which are essential for proper development, tissue homeostasis and protection against foreign pathogens. Human Bcl-2 is an anti-apoptotic, membrane-associated oncoprotein that can promote cell survival through protein-protein interactions with other Bcl-2 related family members, such as the death suppressors Bcl-x_L, Mcl-1, Bcl-w and A1 or the death agonists Bax, Bak, Bik, Bad and BID. The anti-apoptotic function of Bcl-2 can also be regulated through proteolytic processing and phosphorylation. Bcl-2 may promote cell survival by interfering with the activation of the cytochrome c/Apaf-1 pathway through stabilization of the mitochondrial membrane. Mutations in the Bcl-2 gene can contribute to cancers where normal physiological cell death mechanisms are compromised by deregulation of the anti-apoptotic influence of Bcl-2.

CHROMOSOMAL LOCATION

Genetic locus: Bcl2 (mouse) mapping to 1 E2.1.

PRODUCT

Bcl-2 siRNA (m) 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 Bcl-2 shRNA Plasmid (m): sc-29215-SH and Bcl-2 shRNA (m) Lentiviral Particles: sc-29215-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

Bcl-2 siRNA (m) is recommended for the inhibition of Bcl-2 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.

RESEARCH USE

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

GENE EXPRESSION MONITORING

Bcl-2 (C-2): sc-7382 is recommended as a control antibody for monitoring of Bcl-2 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 Bcl-2 gene expression knockdown using RT-PCR Primer: Bcl-2 (m)-PR: sc-29215-PR (20 µl, 500 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, S.J., et al. 2008. Glucose-dependent insulinotropic polypeptide-mediated up-regulation of β-cell antiapoptotic Bcl-2 gene expression is coordinated by cyclic AMP (cAMP) response element binding protein (CREB) and cAMP-responsive CREB coactivator 2. Mol. Cell. Biol. 28: 1644-1656.
2. Doudican, N., et al. 2008. Mebendazole induces apoptosis via Bcl-2 inactivation in chemoresistant melanoma cells. Mol. Cancer Res. 6: 1308-1315.
3. Breitenbuecher, F., et al. 2009. A novel molecular mechanism of primary resistance to FLT3-kinase inhibitors in AML. Blood 113: 4063-4073.
4. Tang, D., et al. 2010. Endogenous HMGB1 regulates autophagy. J. Cell Biol. 190: 881-892.
5. Luna-López, A., et al. 2010. Bcl-2 sustains hormetic response by inducing Nrf-2 nuclear translocation in L929 mouse fibroblasts. Free Radic. Biol. Med. 49: 1192-1204.
6. Ferdek, P.E., et al. 2012. A novel role for Bcl-2 in regulation of cellular calcium extrusion. Curr. Biol. 22: 1241-1246.
7. Qin, H., et al. 2015. 15d-prostaglandin J_2 protects cortical neurons against oxygen-glucose deprivation/reoxygenation injury: involvement of inhibiting autophagy through upregulation of Bcl-2. Cell. Mol. Neurobiol. 35: 303-312.
8. Singh, A., et al. 2021. Bcl2 negatively regulates protective immune responses during mycobacterial infection. Biomol. Concepts 12: 94-109.

PROTOCOLS

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