# SANTA CRUZ BIOTECHNOLOGY, INC.

# caspase-8 siRNA (h): sc-29930



## BACKGROUND

Initiator caspases, which include caspase-8, activate effector caspases by cleaving inactive forms of effector caspases. In the activation cascade responsible for apoptosis induced by TNFRSF1A and mediated by TNFRSF6/FAS, caspase-8 is the most upstream protease. Caspase-8 binds to adaptor molecule FADD, forming an aggregate referred to as death-inducing signaling complex (DISC), which activates caspase-8. The actived protein is released from the complex and further activates downstream apoptotic proteases. Caspase-8, which is a heterodimer consisting of two subunits (p18 and p10), is widely expressed, but is detected at highest levels in peripheral blood leukocytes (PBLs), thymus, liver and spleen. Defects in CASP8, the gene encoding for caspase-8, may cause CASP8D (caspase-8 deficiency disorder), which is characterized by splenomegaly and CD95-induced apoptosis of PBLs, may lead to immunodeficiency due to defects in T lymphocyte, NK cell and B lymphocyte activation.

## CHROMOSOMAL LOCATION

Genetic locus: CASP8 (human) mapping to 2q33.1.

# PRODUCT

caspase-8 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see caspase-8 shRNA Plasmid (h): sc-29930-SH and caspase-8 shRNA (h) Lentiviral Particles: sc-29930-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  $\mu$ l of the RNAse-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNAse-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

# APPLICATIONS

caspase-8 siRNA (h) is recommended for the inhibition of caspase-8 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  $\mu$ M in 66  $\mu$ l. 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**

caspase-8 (8CSP03): sc-56070 is recommended as a control antibody for monitoring of caspase-8 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 caspase-8 gene expression knockdown using RT-PCR Primer: caspase-8 (h)-PR: sc-29930-PR (20  $\mu$ l, 548 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

#### SELECT PRODUCT CITATIONS

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- Mille, F., et al. 2009. The patched dependence receptor triggers apoptosis through a DRAL-caspase-9 complex. Nat. Cell Biol. 11: 739-746.
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- 4. Tang, H., et al. 2011. The scavenging of superoxide radicals promotes apoptosis induced by a novel cell-permeable fusion protein, sTRAIL:FeSOD, in tumor necrosis factor-related apoptosis-inducing ligand-resistant leukemia cells. BMC Biol. 9: 18.
- Huang, S., et al. 2013. p62/sequestosome-1 up-regulation promotes ABT-263-induced caspase-8 aggregation/activation on the autophagosome. J. Biol. Chem. 288: 33654-33666.
- Oh, Y.T., et al. 2015. Suppression of death receptor 5 enhances cancer cell invasion and metastasis through activation of caspase-8/TRAF2-mediated signaling. Oncotarget 6: 41324-41338.
- Lee, D.H., et al. 2016. TRAIL-induced caspase activation is a prerequisite for activation of the endoplasmic reticulum stress-induced signal transduction pathways. J. Cell. Biochem. 117: 1078-1091.
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- Heijink, A.M., et al. 2019. BRCA2 deficiency instigates cGAS-mediated inflammatory signaling and confers sensitivity to tumor necrosis factor-αmediated cytotoxicity. Nat. Commun. 10: 100.
- Pešková, L., et al. 2019. Human embryonic stem cells acquire responsiveness to TRAIL upon exposure to cisplatin. Stem Cells Int. 2019: 4279481.

## **RESEARCH USE**

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