SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-11 siRNA (m): sc-37363

BACKGROUND

Caspase-11 plays a crucial role in OLG death and pathogenesis in experimental autoimmune encephalomyelitis (EAE). caspase-11 also leads to the synthesis of the functional form of the cytokine interleukin-1β. caspases are a family of mammalian proteases related to the Ced-3 gene of *Caenorhabditis elegans*. These Ced-3 orthologs mediate many of the morphological and biochemical features of apoptosis, including structural dismantling of cell bodies and nuclei, fragmentation of genomic DNA, destruction of regulatory proteins, and propagation of other pro-apoptotic molecules. Based on their substrate specificities and DNA sequence homologies, the 14 currently identified caspases may be divided into 3 groups: apoptotic initiators, apoptotic executioners and inflammatory mediators. Upon activation, caspases appear to play an important role in sequelae of traumatic brain injury, spinal cord injury and cerebral iischemia. In addition, they may also play a role in mediating cell death in chronic neurodegenerative conditions such as Alzheimer's disease, Huntington's disease and amyotrophic lateral sclerosis.

REFERENCES

1. Eldadah, B.A., et al. 2000. Caspase pathways, neuonal apoptosis, and CNS injury. J. Neurotrauma 17: 811-829.
2. Chang, H.Y., et al. 2000. Proteases for cell suicide: functions and regulation of caspases. Microbiol. Mol. Biol. Rev. 64: 821-846.
3. Fadeel, B., et al. 2000. The most unkindest cut of all: on the multiple roles of mammalian caspases. Leukemia 14: 1514-1525.
4. Johnson, D. 2000. Noncaspase proteases in apoptosis. Leukemia 14: 1695-1703.
5. Grutter, M.G. 2000. Caspases: key players in programmed cell death. Curr. Opin. Struct. Biol. 10: 649-655.
6. Hisahara, S., et al. 2001. Caspase-11 mediates ogliodendrocyte CEll death and pathogenesis of autoimmune-mediated demyelination. J. Exp. Med. 193: 111-122.
7. Harrison, D.C., et al. 2001. Caspase mRNA expression in a rat model of focal cerebral ischemia. Brain Res. Mol. Brain Res. 89: 133-146.
8. Coffey, R.N., et al. 2001. Signaling for the caspases: their role in prostate cell apoptosis. J. Urol. 165: 5-14.

CHROMOSOMAL LOCATION

Genetic locus: Casp4 (mouse) mapping to 9 A1.

PRODUCT

caspase-11 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 caspase-11 shRNA Plasmid (m): sc-37363-SH and caspase-11 shRNA (m) Lentiviral Particles: sc-37363-V as alternate gene silencing products.

For independent verification of caspase-11 (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-37363A, sc-37363B and sc-37363C.

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

caspase-11 siRNA (m) is recommended for the inhibition of caspase-11 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

caspase-11 p20 (A-2): sc-374615 is recommended as a control antibody for monitoring of caspase-11 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 caspase-11 gene expression knockdown using RT-PCR Primer: caspase-11 (m)-PR: sc-37363-PR (20 µl, 588 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xu, J., et al. 2014. Macrophage endocytosis of high-mobility group box 1 triggers pyroptosis. Cell Death Differ. 21: 1229-1239.

RESEARCH USE

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