SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-14 siRNA (m): sc-37365

BACKGROUND

A unique family of cysteine proteases has been described that differs in sequence, structure and substrate specificity from any previously described protease family. This family, CED-3/caspase-1, is composed of caspase-1, caspase-2, caspase-3, caspase-4, caspase-6 and caspase-7 (also designated MCH3, ICE-LAP3 or CMH-1), caspase-9, caspase-10, and caspase-14. CED-3/caspase-1 family members function as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. Caspase-3, caspase-7 and caspase-9, but not caspase-1, have been shown to cleave the nuclear protein PARP into an apoptotic fragment. Caspase-14, also designated MICE (for mini-ICE), is highly expressed in embryonic tissues but appears to be absent from adult tissues. Procaspase-14 can be processed *in vitro* by caspase-8 and caspase-10 but not by other caspases.

REFERENCES

1. Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homologue of the *Caenorhabditis elegans* cell death protein CED-3 is activated during Fas- and tumor necrosis factor-induced apoptosis. J. Biol. Chem. 271: 1621-1625.
2. Fernandes-Alnemri, T.F., et al. 1996. *In vitro* activation of CPP32 and MCH3 by MCH4, a novel human apoptotic cysteine protease containing two FADD-like domains. Proc. Natl. Acad. Sci. USA 93: 7464-7469.
3. Duan, H., et al. 1996. ICE-LAP6, a novel member of the ICE/CED-3 gene family, is activated by the cytotoxic T cell protease granzyme B. J. Biol. Chem. 271: 16720-16724.
4. Casciola-Rosen, L., et al. 1996. Apopain/CPP32 cleaves proteins that are essential for cellular repair: a fundamental principle of apoptotic death. J. Exp. Med. 183: 1957-1964.
5. Hu, S., et al. 1998. Caspase-14 is a novel developmentally regulated protease. J. Biol. Chem. 273: 29648-29653.
6. Van de Craen, M., et al. 1998. Identification of a new caspase homologue: caspase-14. Cell Death Differ. 5: 838-846.
7. Ahmad, M., et al. 1998. Identification and characterization of murine caspase-14, a new member of the caspase family. Cancer Res. 58: 5201-5205.

CHROMOSOMAL LOCATION

Genetic locus: Casp14 (mouse) mapping to 10 C1.

PRODUCT

caspase-14 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-14 shRNA Plasmid (m): sc-37365-SH and caspase-14 shRNA (m) Lentiviral Particles: sc-37365-V as alternate gene silencing products.

For independent verification of caspase-14 (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-37365A, sc-37365B and sc-37365C.

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-14 siRNA (m) is recommended for the inhibition of caspase-14 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-14 (32): sc-136351 is recommended as a control antibody for monitoring of caspase-14 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-14 gene expression knockdown using RT-PCR Primer: caspase-14 (m)-PR: sc-37365-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.