

CIDE-A siRNA (m): sc-37440

BACKGROUND

The DNA fragmentation factor (DFF) is involved in the caspase-3 apoptotic pathway. DFF is composed of two subunits, DFF-45 (also designated ICAD, for inhibitor of CAD) and CPAN (caspase-activated nuclease), also designated CAD (caspase-activated deoxyribonuclease). CPAN is a DNase that is responsible for DNA degradation during apoptosis. CPAN is inhibited by DFF-45. Caspase-3 acts to dissociate CPAN from DFF-45, allowing CPAN to enter the nucleus and degrade DNA. CIDE-A and CIDE-B have been identified as proteins that share homology with the N-terminal region of DFF-45. Like CPAN, CIDE-A and CIDE-B promote cell death and DNA fragmentation and are inhibited by DFF-45.

REFERENCES

1. Liu, X., et al. 1997. DFF, a heterodimeric protein that functions downstream of caspase-3 to trigger DNA fragmentation during apoptosis. *Cell* 89: 175-184.
2. Toh, S.Y., et al. 1998. Identification of the nuclear factor HMG2 as an activator for DFF nuclease activity. *Biochem. Biophys. Res. Commun.* 250: 598-601.
3. Enari, M., et al. 1998. A caspase-activated DNase that degrades DNA during apoptosis. *Nature* 391: 43-50.
4. Halenbeck, R., et al. 1998. CPAN, a human nuclease regulated by the caspase-sensitive inhibitor DFF45. *Curr. Biol.* 8: 537-540.
5. Sakahira, H., et al. 1998. Cleavage of CAD inhibitor in CAD activation and DNA degradation during apoptosis. *Nature* 391: 96-99.
6. Inohara, N., et al. 1998. CIDE, a novel family of cell death activators with homology to the 45 kDa subunit of the DNA fragmentation factor. *EMBO J.* 17: 2526-2533.
7. Inohara, N., et al. 1999. Identification of regulatory and catalytic domains in the apoptosis nuclease DFF40/CAD. *J. Biol. Chem.* 274: 270-274.
8. Lin, S.C., et al. 2004. CIDE-A, a novel link between brown adipose tissue and obesity. *Trends Mol. Med.* 10: 434-439.

CHROMOSOMAL LOCATION

Genetic locus: Cidea (mouse) mapping to 18 E1.

PRODUCT

CIDE-A 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CIDE-A shRNA Plasmid (m): sc-37440-SH and CIDE-A shRNA (m) Lentiviral Particles: sc-37440-V as alternate gene silencing products.

For independent verification of CIDE-A (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-37440A, sc-37440B and sc-37440C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CIDE-A siRNA (m) is recommended for the inhibition of CIDE-A 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CIDE-A gene expression knockdown using RT-PCR Primer: CIDE-A (m)-PR: sc-37440-PR (20 μ l). 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.