

# CIDE-A siRNA (h): sc-37439

## 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 (human) mapping to 18p11.21.

## PRODUCT

CIDE-A siRNA (h) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CIDE-A shRNA Plasmid (h): sc-37439-SH and CIDE-A shRNA (h) Lentiviral Particles: sc-37439-V as alternate gene silencing products.

For independent verification of CIDE-A (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37439A, sc-37439B and sc-37439C.

## 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

CIDE-A siRNA (h) is recommended for the inhibition of CIDE-A 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

CIDE-A (4B9): sc-293289 is recommended as a control antibody for monitoring of CIDE-A 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 CIDE-A gene expression knockdown using RT-PCR Primer: CIDE-A (h)-PR: sc-37439-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.