SANTA CRUZ BIOTECHNOLOGY, INC.

Acinus siRNA (m): sc-140808

BACKGROUND

The complex process of apoptosis requires the systematic activation of cysteine proteases, the condensation of chromatin and the fragmentation of DNA. Chromatin condensation occurs following the proteolytic activation of the caspases and the subsequent induction of the nuclear protein Acinus (apoptotic chromatin condensation inducer in the nucleus). Various isoforms of Acinus, which are generated from alternative splicing patterns, include AcinusL, AcinusS and AcinusS'. Acinus is ubiquitously expressed and predominantly localized to the nucleus, where it associates with both the nuclear membrane and the nucleoplasm. Combined *in vitro* and *in vivo* studies indicate that during apoptosis caspase-3 cleaves the carboxy-terminus of Acinus to generate the soluble protein p23, which is essential for inducing chromatin condensation.

REFERENCES

1. Kass, G.E., et al. 1996. Chromatin condensation during apoptosis requires ATP. Biochem. J. 318: 749-752.
2. Ishikawa, K., et al. 1998. Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 5: 169-176.
3. Sakahira, H., et al. 1999. Apoptotic nuclear morphological change without DNA fragmentation. Curr. Biol. 9: 543-546.
4. Porter, A.G., et al. 1999. Emerging roles of caspase-3 in apoptosis. Cell Death Differ. 6: 99-104.
5. Sahara, S., et al. 1999. Acinus is a caspase-3-activated protein required for apoptotic chromatin condensation. Nature 401: 168-173.
6. Samali, A., et al.1999. Apoptosis: cell death defined by caspase activation. Cell Death Differ. 6: 495-496.
7. Schwerk, C., et al. 2003. ASAP, a novel protein complex involved in RNA processing and apoptosis. Mol. Cell. Biol. 23: 2981-2990.

CHROMOSOMAL LOCATION

Genetic locus: Acin1 (mouse) mapping to 14 C3.

PRODUCT

Acinus siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Acinus shRNA Plasmid (m): sc-140808-SH and Acinus shRNA (m) Lentiviral Particles: sc-140808-V as alternate gene silencing products.

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.

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

Acinus siRNA (m) is recommended for the inhibition of Acinus 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Acinus gene expression knockdown using RT-PCR Primer: Acinus (m)-PR: sc-140808-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.