SANTA CRUZ BIOTECHNOLOGY, INC.

ANT3 siRNA (h): sc-91585

BACKGROUND

ANT3 (adenine nucleotide translocator 2), also known as SLC25A6 (solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 6), ADP/ATP translocase 3, AAC3 (ADP/ATP carrier protein 3) or ANT3Y, is a 298 amino acid mitochondrial protein that likely participates in the formation of the permeability transition pore complex (PTPC), a structure that is important for the regulation of apoptosis. A member of the mitochondrial carrier family, ANT3 catalyzes ADP/ATP exchange across the mitochondrial inner membrane and interacts with both VPRBP (HIV-1 Vpr) and influenza A virus PB1-F2. ANT3 contains three solcar repeats and is encoded by a gene located on pseudoautosomal region 1 (PAR1) of X and Y chromosomes.

REFERENCES

1. Houldsworth, J. and Attardi, G. 1988. Two distinct genes for ADP/ATP translocase are expressed at the mRNA level in adult human liver. Proc. Natl. Acad. Sci. USA 85: 377-381.
2. Cozens, A.L., et al. 1989. DNA sequences of two expressed nuclear genes for human mitochondrial ADP/ATP translocase. J. Mol. Biol. 206: 261-280.
3. Slim, R., et al. 1993. A human pseudoautosomal gene encodes the ANT3 ADP/ATP translocase and escapes X-inactivation. Genomics 16: 26-33.
4. Schiebel, K., et al. 1993. A human pseudo-autosomal gene, ADP/ATP translocase, escapes X-inactivation whereas a homologue on Xq is subject to X-inactivation. Nat. Genet. 3: 82-87.
5. Toder, R., et al. 1995. ANT3 and STS are autosomal in prosimian lemurs: implications for the evolution of the pseudoautosomal region. Hum. Genet. 95: 22-28.
6. Jang, J.Y. and Lee, C.E. 2003. Mitochondrial adenine nucleotide translocator 3 is regulated by IL-4 and IFN-γ via STAT-dependent pathways. Cell. Immunol. 226: 11-19.
7. Zamora, M., et al. 2004. Adenine nucleotide translocase 3 (ANT3) overexpression induces apoptosis in cultured cells. FEBS Lett. 563: 155-160.
8. Zamarin, D., et al. 2005. Influenza virus PB1-F2 protein induces cell death through mitochondrial ANT3 and VDAC1. PLoS Pathog. 1: e4.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A6 (human) mapping to Xp22.33/Yp11.32.

PRODUCT

ANT3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ANT3 shRNA Plasmid (h): sc-91585-SH and ANT3 shRNA (h) Lentiviral Particles: sc-91585-V as alternate gene silencing products.

For independent verification of ANT3 (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-91585A, sc-91585B and sc-91585C.

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

ANT3 siRNA (h) is recommended for the inhibition of ANT3 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 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

ANT3 (2A9): sc-293434 is recommended as a control antibody for monitoring of ANT3 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 ANT3 gene expression knockdown using RT-PCR Primer: ANT3 (h)-PR: sc-91585-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.