SANTA CRUZ BIOTECHNOLOGY, INC.

ANT4 siRNA (m): sc-105072

BACKGROUND

ANT4 (adenine nucleotide translocator 4), also known as ALC25A31 (solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator), member 31), AAC4 or SFEC, is a 315 amino acid multi-pass membrane protein that localizes to the inner mitochondrial membrane and contains three solcar repeats. Expressed in testis, brain, sperm and liver, ANT4 functions to catalyze the exchange of ATP and ADP across the mitochondrion, possibly mediating energy generation, energy consumption and, ultimately, motility, in the distal flagellum. The gene encoding ANT4 maps to human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

REFERENCES

1. Dolce, V., et al. 2005. A fourth ADP/ATP carrier isoform in man: identification, bacterial expression, functional characterization and tissue distribution. FEBS Lett. 579: 633-637.
2. Ford, W.C. 2006. Glycolysis and sperm motility: does a spoonful of sugar help the flagellum go round? Hum. Reprod. Update 12: 269-274.
3. Kim, Y.H., et al. 2007. Compartmentalization of a unique ADP/ATP carrier protein SFEC (sperm flagellar energy carrier, AAC4) with glycolytic enzymes in the fibrous sheath of the human sperm flagellar principal piece. Dev. Biol. 302: 463-476.
4. Miki, K. 2007. Energy metabolism and sperm function. Soc. Reprod. Fertil. Suppl. 65: 309-325.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610796. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Kehoe, S.M., et al. 2008. A conserved E2F6-binding element in murine meiosis-specific gene promoters. Biol. Reprod. 79: 921-930.

CHROMOSOMAL LOCATION

Genetic locus: Slc25a31 (mouse) mapping to 3 B.

PRODUCT

ANT4 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 ANT4 shRNA Plasmid (m): sc-105072-SH and ANT4 shRNA (m) Lentiviral Particles: sc-105072-V as alternate gene silencing products.

For independent verification of ANT4 (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-105072A, sc-105072B and sc-105072C.

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

ANT4 siRNA (m) is recommended for the inhibition of ANT4 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 ANT4 gene expression knockdown using RT-PCR Primer: ANT4 (m)-PR: sc-105072-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.