



ANT2 siRNA (m): sc-72506

BACKGROUND

ANT2 (adenine nucleotide translocator 2), also known as SLC25A5 (solute carrier family 25 (mitochondrial carrier; adenine nucleotide translocator) member 5), T2, T3, 2F1 or AAC2, is a 298 amino acid multi-pass membrane protein that localizes to the inner mitochondrial membrane and contains three solcar repeats. Existing as one of the most abundant mitochondrial proteins, ANT2 functions as a homodimer that facilitates the exchange of ADP and ATP between the mitochondrion and the cytosol, thus linking the compartment of ATP production (within the mitochondrion) to the areas of ATP utilization (within the cytosol). Suppression of ANT2 in breast cancer cells results in apoptosis and tumor growth inhibition, suggesting that ANT2 may be involved in carcinogenesis. ANT3 (adenine nucleotide translocator 3) is a 298 amino acid mitochondrial protein that functions in a similar manner to ANT2 but, unlike ANT2, may also play a role in the formation of the permeability transition pore complex (PTPC), a structure that is important for the regulation of apoptosis.

REFERENCES

1. Chen, S.T., et al. 1990. A human ADP/ATP translocase gene has seven pseudogenes and localizes to chromosome X. *Somat. Cell Mol. Genet.* 16: 143-149.
2. De Marcos Lousa, C., et al. 2002. The human mitochondrial ADP/ATP carriers: kinetic properties and biogenesis of wild-type and mutant proteins in the yeast *S. cerevisiae*. *Biochemistry* 41: 14412-14420.
3. Luciakova, K., et al. 2003. Repression of the human adenine nucleotide translocase-2 gene in growth-arrested human diploid cells: the role of nuclear factor-1. *J. Biol. Chem.* 278: 30624-30633.
4. Deniaud, A., et al. 2004. Mitochondrial membrane permeabilization by HIV-1 Vpr. *Mitochondrion* 4: 223-233.
5. Palmieri, F. 2004. The mitochondrial transporter family (SLC25): physiological and pathological implications. *Pflugers Arch.* 447: 689-709.

CHROMOSOMAL LOCATION

Genetic locus: SLC25a5 (mouse) mapping to X A3.3.

PRODUCT

ANT2 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 ANT2 shRNA Plasmid (m): sc-72506-SH and ANT2 shRNA (m) Lentiviral Particles: sc-72506-V as alternate gene silencing products.

For independent verification of ANT2 (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-72506A, sc-72506B and sc-72506C.

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 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

ANT2 siRNA (m) is recommended for the inhibition of ANT2 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 ANT2 gene expression knockdown using RT-PCR Primer: ANT2 (m)-PR: sc-72506-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Seo, J.B., et al. 2019. Knockdown of ANT2 reduces adipocyte hypoxia and improves Insulin resistance in obesity. *Nat. Metab.* 1: 86-97.

RESEARCH USE

For research use only, not for use in diagnostic procedures.