



ANT4 (K-12): sc-104055

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., Scarcia, P., Iacopetta, D. and Palmieri, F. 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., Haidl, G., Schaefer, M., Egnér, U., Mandal, A. and Herr, J.C. 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., Oka, M., Hankowski, K.E., Reichert, N., Garcia, S., McCarry, J.R., Gaubatz, S. and Terada, N. 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.

SOURCE

ANT4 (K-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ANT4 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-104055 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ANT4 (K-12) is recommended for detection of ANT4 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ANT4 siRNA (m): sc-105072, ANT4 shRNA Plasmid (m): sc-105072-SH and ANT4 shRNA (m) Lentiviral Particles: sc-105072-V.

Molecular Weight of ANT4: 35 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.