

ANT1/2/3/4 (H-188): sc-11433

BACKGROUND

Adenine nucleotide translocator proteins 1, 2, 3 and 4 (ANT1, 2, 3 and 4) are multi-pass membrane proteins of the mitochondrial inner membrane that facilitate the exchange of ADP and ATP between the mitochondrion and the cytosol. ANT1, 2, 3 and 4 belong to the mitochondrial carrier family and contain three solcar repeats each. ANT1 associates with VDAC1 and VDAC2 to form a permeability transition pore complex (PTPC) of the mitochondrial inner and outer membranes. Interestingly, defects in the gene encoding ANT1 are the cause of progressive external ophthalmoplegia with mitochondrial DNA deletions autosomal dominant type 2 (PEOA2). ANT1 is encoded by a gene that maps to human chromosome Xq24, while ANT2, ANT3 and ANT4 are encoded by genes that map to regions of chromosomes X, Y and 4.

REFERENCES

1. Neckelmann, N., et al. 1987. cDNA sequence of a human skeletal muscle ADP/ATP translocator: lack of a leader peptide, divergence from a fibroblast translocator cDNA, and coevolution with mitochondrial DNA genes. *Proc. Natl. Acad. Sci. USA* 84: 7580-7584.
2. Houldsworth, J., et al. 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.

SOURCE

ANT1/2/3/4 (H-188) is a rabbit polyclonal antibody raised against amino acids 45-233 of ANT1 of human origin.

PRODUCT

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

APPLICATIONS

ANT1/2/3/4 (H-188) is recommended for detection of ANT1, ANT2 and ANT4 of mouse, rat and human origin, and ANT3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

ANT1/2/3/4 (H-188) is also recommended for detection of ANT1, ANT2 and ANT4 of mouse, rat and human origin, and ANT3 of human origin in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of ANT1/2/3: 33 kDa.

Molecular Weight of ANT4: 35 kDa.

Positive Controls: mouse heart extract: sc-2254 or rat skeletal muscle extract: sc-364810.

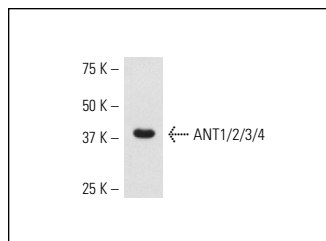
STORAGE

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

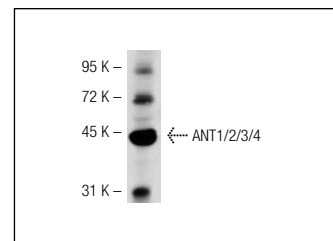
RESEARCH USE

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

DATA



ANT1/2/3/4 (H-188): sc-11433. Western blot analysis of ANT1/2/3/4 expression in rat skeletal muscle tissue extract.



ANT1/2/3/4 (H-188): sc-11433. Western blot analysis of ANT1/2/3/4 expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

1. Knorpp, C., et al. 2003. Plant mitochondrial nucleoside diphosphate kinase is attached to the membrane through interaction with the adenine nucleotide translocator. *FEBS Lett.* 555: 363-366.
2. Azarashvili, T., et al. 2007. The peripheral-type benzodiazepine receptor is involved in control of Ca²⁺-induced permeability transition pore opening in rat brain mitochondria. *Cell Calcium* 42: 27-39.
3. Tokuhara, D., et al. 2007. Novel diagnostic approach to citrin deficiency: analysis of citrin protein in lymphocytes. *Mol. Genet. Metab.* 90: 30-36.
4. Martin, L.J., et al. 2009. The mitochondrial permeability transition pore in motor neurons: involvement in the pathobiology of ALS mice. *Exp. Neurol.* 218: 333-346.
5. Ravera, S., et al. 2009. Evidence for aerobic ATP synthesis in isolated myelin vesicles. *Int. J. Biochem. Cell Biol.* 41: 1581-1591.
6. Panfoli, I., et al. 2009. Evidence for aerobic metabolism in retinal rod outer segment disks. *Int. J. Biochem. Cell Biol.* 41: 2555-2565.
7. Bouyer, G., et al. 2011. Erythrocyte peripheral type benzodiazepine receptor/voltage-dependent anion channels are upregulated by *Plasmodium falciparum*. *Blood* 118: 2305-2312.
8. Olvera-Sanchez, S., et al. 2011. Mitochondrial heat shock protein participates in placental steroidogenesis. *Placenta* 32: 222-229.
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10. Ravera S., et al. 2011. Evidence for ectopic aerobic ATP production on C6 glioma cell plasma membrane. *Cell. Mol. Neurobiol.* 31: 313-321.

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Try **ANT3 (2A9): sc-293434**, our highly recommended monoclonal alternative to ANT1/2/3/4 (H-188).