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Anti-ANT4 Antibody

Catalog # AP51517

Product Information

Application	WB, IHC, IF/IC
Primary Accession	Q9H0C2
Reactivity	Human, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	35022

Additional Information

Gene ID	83447
Other Names	AAC4; ANT4; SFEC; ADP/ATP translocase 4; ADP, ATP carrier protein 4; Adenine nucleotide translocator 4; ANT 4; Solute carrier family 25 member 31; Sperm flagellar energy carrier protein
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human ANT4. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

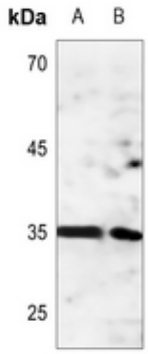
Name	SLC25A31 (HGNC:25319)
Function	ADP:ATP antiporter that mediates import of ADP into the mitochondrial matrix for ATP synthesis, and export of ATP out to fuel the cell (By similarity) (PubMed:15670820). Cycles between the cytoplasmic-open state (c-state) and the matrix-open state (m-state): operates by the alternating access mechanism with a single substrate- binding site intermittently exposed to either the cytosolic (c-state) or matrix (m-state) side of the inner mitochondrial membrane (By similarity). Specifically required during spermatogenesis, probably to mediate ADP:ATP exchange in spermatocytes (PubMed:17137571). Large ATP supplies from mitochondria may be critical for normal progression of spermatogenesis during early stages of meiotic prophase I, including DNA double-strand break repair and chromosomal synapsis (By similarity). In addition to its ADP:ATP antiporter activity, also involved in mitochondrial uncoupling and mitochondrial permeability transition pore (mPTP) activity (By similarity). Plays a role in mitochondrial

	uncoupling by acting as a proton transporter: proton transport uncouples the proton flows via the electron transport chain and ATP synthase to reduce the efficiency of ATP production and cause mitochondrial thermogenesis (By similarity). Proton transporter activity is inhibited by ADP:ATP antiporter activity, suggesting that SLC25A31/ANT4 acts as a master regulator of mitochondrial energy output by maintaining a delicate balance between ATP production (ADP:ATP antiporter activity) and thermogenesis (proton transporter activity) (By similarity). Proton transporter activity requires free fatty acids as cofactor, but does not transport it (By similarity). Among nucleotides, may also exchange ADP for dATP and dADP (PubMed:15670820). Also plays a key role in mPTP opening, a non-specific pore that enables free passage of the mitochondrial membranes to solutes of up to 1.5 kDa, and which contributes to cell death (By similarity). It is however unclear if SLC25A31/ANT4 constitutes a pore-forming component of mPTP or regulates it (By similarity).
Cellular Location	Mitochondrion inner membrane; Multi-pass membrane protein. Membrane; Multi-pass membrane protein. Cell projection, cilium, flagellum membrane; Multi-pass membrane protein. Note=In sperm flagellum this protein is located in the fibrous sheath, a non-mitochondrial region (PubMed:17137571). May localize to non-mitochondrial membranes (PubMed:27641616)
Tissue Location	Expressed in brain, liver, sperm and testis (PubMed:15670820, PubMed:17137571). In testis, expressed at higher level in spermatocytes, while it is expressed at lower level in spermatogonial cells (PubMed:17681941). Expressed in erythrocytes (at protein level) (PubMed:27641616).

References

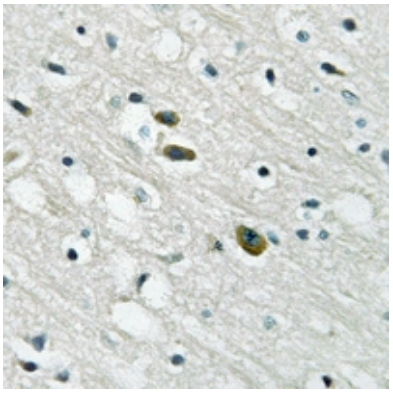
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Wiemann S.,et al.Genome Res. 11:422-435(2001).
Hillier L.W.,et al.Nature 434:724-731(2005).
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Images

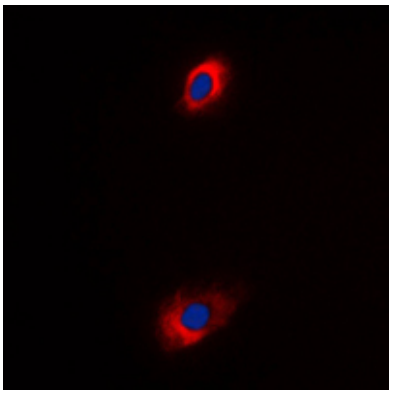


Western blot analysis of ANT4 expression in HEK293T (A), A549 (B) whole cell lysates. (Predicted band size: 35 kD; Observed band size: 35 kD)

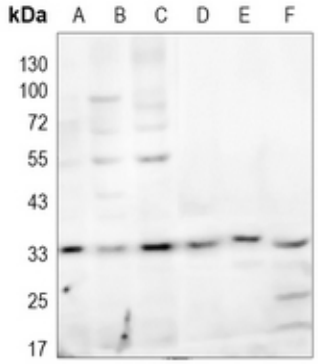
Immunohistochemical analysis of ANT4 staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The



section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of ANT4 staining in K562 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary antibody (red) in PBS at room temperature in the dark. DAPI was used to stain the cell nuclei (blue).



Western blot analysis of ANT4 expression in A2780 (A), MG63 (B), A375 (C), mouse kidney (D), rat lung (E), rat kidney (F) whole cell lysates. (Predicted band size: 35 kD; Observed band size: 35 kD)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.