

SLC25A31 Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP12028c**Specification**

SLC25A31 Antibody (Center) - Product Information

Application	IF, WB, IHC-P,E
Primary Accession	O9H0C2
Other Accession	O4R8M0 , NP_112581.1
Reactivity	Human
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Antigen Region	139-167

SLC25A31 Antibody (Center) - Additional Information**Gene ID** 83447**Other Names**

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, SLC25A31, AAC4, ANT4, SFEC

Target/Specificity

This SLC25A31 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 139-167 amino acids from the Central region of human SLC25A31.

Dilution

IF~~1:10~50
WB~~1:1000
IHC-P~~1:10~50

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

SLC25A31 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

SLC25A31 Antibody (Center) - 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 (PubMed:[15670820](#)) (By similarity). 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](#))

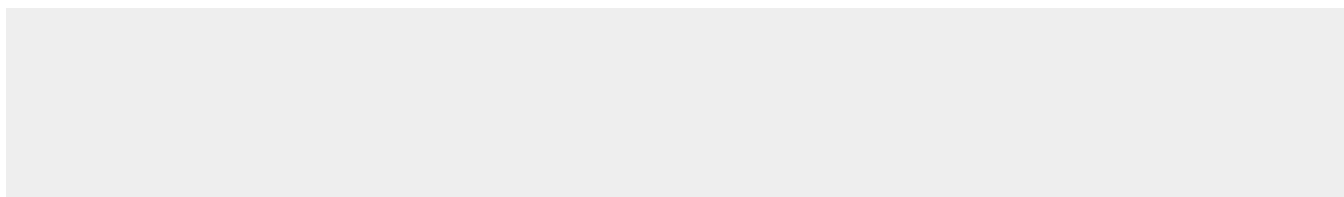
Tissue Location

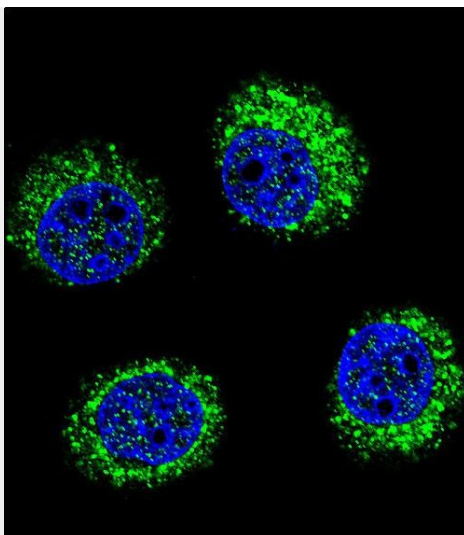
Expressed in brain, liver, sperm and testis (PubMed:[15670820](#), PubMed:[17137571](#)). In testis, expressed at higher level in spermatocytes, while it is expressed at lower level in spermatogonial cells (PubMed:[17681941](#)). Expressed in erythrocytes (at protein level) (PubMed:[27641616](#)).

SLC25A31 Antibody (Center) - Protocols

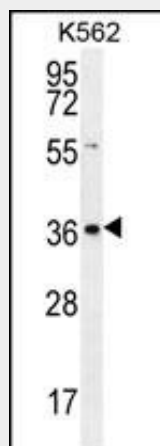
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

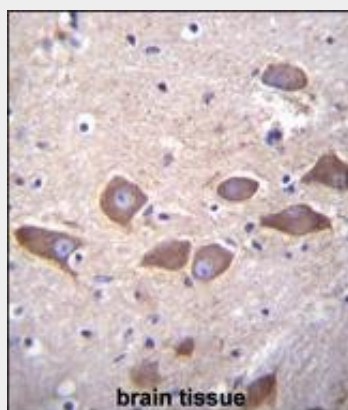
SLC25A31 Antibody (Center) - Images



Confocal immunofluorescent analysis of SLC25A31 Antibody (Center)(Cat#AP12028c) with U-251MG cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). DAPI was used to stain the cell nuclear (blue).



SLC25A31 Antibody (Center) (Cat. #AP12028c) western blot analysis in K562 cell line lysates (35ug/lane). This demonstrates the SLC25A31 antibody detected the SLC25A31 protein (arrow).



SLC25A31 Antibody (Center) (Cat. #AP12028c) immunohistochemistry analysis in formalin fixed and paraffin embedded human brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of SLC25A31 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

SLC25A31 Antibody (Center) - Background

Mitochondrial ADP/ATP carriers, such as SLC25A31, are nuclear-coded mitochondrial proteins that catalyze the exchange of ATP generated in mitochondria by ATP synthase (see MIM 108729) against ADP produced in cytosol by most energy-consuming reactions (Dolce et al., 2005 [PubMed 15670820]).

SLC25A31 Antibody (Center) - References

Gallerne, C., et al. Int. J. Biochem. Cell Biol. 42(5):623-629(2010)
Kim, Y.H., et al. Dev. Biol. 302(2):463-476(2007)
Dolce, V., et al. FEBS Lett. 579(3):633-637(2005)
Simpson, J.C., et al. EMBO Rep. 1(3):287-292(2000)