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TNPO1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1934e

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q92973
Other Accession	Q8BFY9, Q3SYU7
Reactivity	Human
Predicted	Bovine, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17873
Calculated MW	102355
Antigen Region	47-74

Additional Information

Gene ID	3842
Other Names	Transportin-1, Importin beta-2, Karyopherin beta-2, M9 region interaction protein, MIP, TNPO1, KPNB2, MIP1, TRN
Target/Specificity	This TNPO1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 47-74 amino acids from the N-terminal region of human TNPO1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
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	TNPO1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TNPO1
Synonyms	KPNB2, MIP1, TRN

Function	Functions in nuclear protein import as nuclear transport receptor. Serves as receptor for nuclear localization signals (NLS) in cargo substrates (PubMed:24753571). May mediate docking of the importin/substrate complex to the nuclear pore complex (NPC) through binding to nucleoporin and the complex is subsequently translocated through the pore by an energy requiring, Ran-dependent mechanism. At the nucleoplasmic side of the NPC, Ran binds to the importin, the importin/substrate complex dissociates and importin is re-exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran. The directionality of nuclear import is thought to be conferred by an asymmetric distribution of the GTP- and GDP-bound forms of Ran between the cytoplasm and nucleus (By similarity). Involved in nuclear import of M9-containing proteins. In vitro, binds directly to the M9 region of the heterogeneous nuclear ribonucleoproteins (hnRNP), A1 and A2 and mediates their nuclear import. Involved in hnRNP A1/A2 nuclear export. Mediates the nuclear import of ribosomal proteins RPL23A, RPS7 and RPL5 (PubMed:11682607). In vitro, mediates nuclear import of H2A, H2B, H3 and H4 histones (By similarity). In vitro, mediates nuclear import of SRP19 (PubMed:11682607). Mediates nuclear import of ADAR/ADAR1 isoform 1 and isoform 5 in a RanGTP-dependent manner (PubMed:19124606, PubMed:24753571). Main mediator of PR-DUB complex component BAP1 nuclear import; acts redundantly with the karyopherins KPNA1 and KPNA2 (PubMed:35446349).
Cellular Location	Cytoplasm. Nucleus.

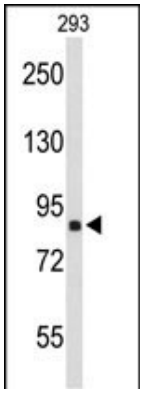
Background

TNPO1 comprises the beta subunit of the karyopherin receptor complex which interacts with nuclear localization signals to target nuclear proteins to the nucleus. The karyopherin receptor complex is a heterodimer of an alpha subunit which recognizes the nuclear localization signal and a beta subunit which docks the complex at nucleoporins.

References

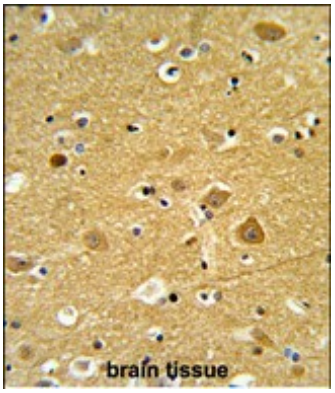
Fineberg, K., et al., Biochemistry 42(9):2625-2633 (2003).
Nelson, L.M., et al., Virology 306(1):162-169 (2003).
Le Roux, L.G., et al., J. Virol. 77(4):2330-2337 (2003).
Limon, A., et al., J. Virol. 76(21):10598-10607 (2002).
Dvorin, J.D., et al., J. Virol. 76(23):12087-12096 (2002).

Images

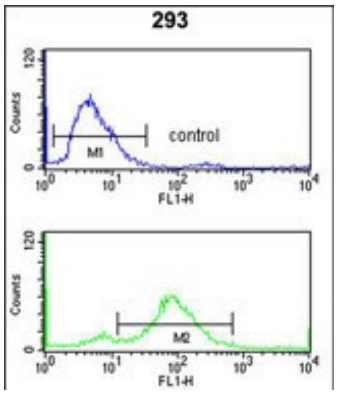


Western blot analysis of TNPO1 Antibody (N-term) (Cat. #AP1934e) in 293 cell line lysates (35ug/lane). TNPO1 (arrow) was detected using the purified Pab.

Formalin-fixed and paraffin-embedded human brain



tissue reacted with TNPO1 Antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



TNPO1 Antibody (N-term)(Cat. #AP1934e) flow cytometry analysis of 293 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.