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KPNA4 Antibody

Catalog # ASC11208

Product Information

Application	WB, IF, ICC, E
Primary Accession	O00629
Other Accession	EAW78632, 119599038
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	57887
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	KPNA4 antibody can be used for detection of KPNA4 by Western blot at 1 g/mL. Antibody can also be used for immunocytochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	3840
Other Names	Importin subunit alpha-3, Importin alpha Q1, Qip1, Karyopherin subunit alpha-4, KPNA4, QIP1
Target/Specificity	KPNA4;
Reconstitution & Storage	KPNA4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	KPNA4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KPNA4 {ECO:0000303|PubMed:38512451, ECO:0000312|HGNC:HGNC:6397}
Function	Functions in nuclear protein import as an adapter protein for nuclear receptor KPNB1 (PubMed:10567565, PubMed:20818336, PubMed:28760339, PubMed:29042532, PubMed:38512451). Binds specifically and directly to substrates containing either a simple or bipartite NLS motif (PubMed:20818336, PubMed:28760339, PubMed:29042532, PubMed:38512451). Docking of the importin/substrate complex to the nuclear pore complex (NPC) is mediated by KPNB1 through binding to nucleoporin FxFG repeats and the complex is subsequently translocated through the pore by an energy requiring, Ran-dependent mechanism (PubMed:20818336,

PubMed:28760339, PubMed:29042532, PubMed:38512451). At the nucleoplasmic side of the NPC, Ran binds to importin-beta and the three components separate and importin-alpha and -beta are re- exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran from importin (PubMed:20818336, PubMed:28760339, PubMed:29042532, PubMed:38512451). 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 (PubMed:20818336, PubMed:28760339, PubMed:29042532, PubMed:38512451). Mediates nuclear import of AARS1, MRTFA and RANBP3 (PubMed:10567565, PubMed:20818336, PubMed:28760339, PubMed:38512451).

Cellular Location Cytoplasm. Nucleus

Tissue Location Highly expressed in testis, ovary, small intestine, heart, skeletal muscle, lung and pancreas, but barely detectable in kidney, thymus, colon and peripheral blood leukocytes

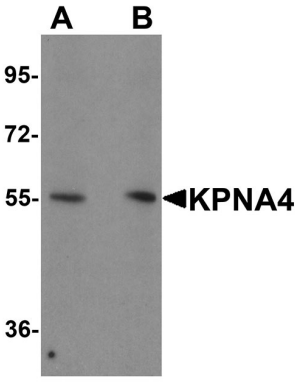
Background

KPNA4 Antibody: Karyopherin, a cytosolic and heterodimeric protein complex consisting of alpha and beta subunits, is responsible for targeting proteins with nuclear localization signals to the nuclear pore complex by an energy requiring, Ran-dependent mechanism. The alpha subunit and imported substrate enter the nucleus and accumulate in the nucleoplasm, while the beta subunit accumulates at the NPC. Molecules containing the classical nuclear localization signal (NLS) are transported into the nucleus by alpha/beta heterodimers. KPNA3 has been shown to be important in the TNF-α-induced nuclear import of NF-κB. It is also involved in the stress-mediated nuclear stabilization of p53 and the nuclear import and replication of HIV-1 in both dividing and non-dividing cells.

References

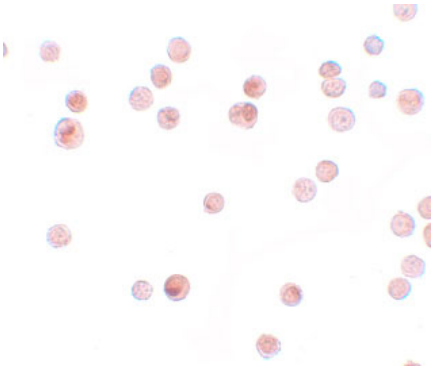
Moroianu J. Molecular mechanisms of nuclear protein transport. Crit. Rev. Eukaryot. Gene Expr.1997; 7:61-72.
Gilchrist D and Rexach M. Molecular basis for the rapid dissociation of nuclear localization signals from karyopherin alpha in the nucleoplasm. J. Biol. Chem.2003; 278: 51937-49.
Goldfarb DS, Corbett AH, Mason DA, et al. Importin alpha: a multi-purpose nuclear-transport receptor. Trends Cell Biol.2004; 14:505-14.
Fagerlund R, Melen K, Cao X, et al. NF-kappaB p52, RelB, and c-Rel are transported into the nucleus via a subset of importin alpha molecules. Cell Signal.2008; 20:1442-51.

Images

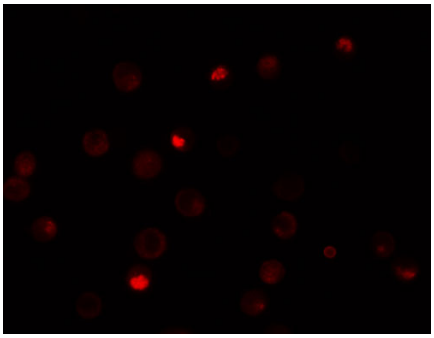


Western blot analysis of KPNA4 in HeLa cell lysate with KPNA4 antibody at (A) 0.5 and (B) 1 µg/mL.

Immunocytochemistry of KPNA4 in HeLa cells with KPNA4



antibody at 2.5 µg/mL.



Immunofluorescence of KPNA4 in HeLa cells with KPNA4 antibody at 20 µg/mL.

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