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KPNA2 Antibody

Catalog # ASC11206

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P52292
Other Accession	NP_002257, 4504897
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	57862
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	KPNA2 antibody can be used for detection of KPNA2 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	3838
Other Names	Importin subunit alpha-1, Karyopherin subunit alpha-2, RAG cohort protein 1, SRP1-alpha, KPNA2, RCH1, SRP1
Target/Specificity	KPNA2;
Reconstitution & Storage	KPNA2 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	KPNA2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KPNA2 (HGNC:6395)
Synonyms	RCH1, SRP1
Function	Functions in nuclear protein import as an adapter protein for nuclear receptor KPNB1 (PubMed:28991411, PubMed:32130408, PubMed:7604027, PubMed:7754385). Binds specifically and directly to substrates containing either a simple or bipartite NLS motif (PubMed:28991411, PubMed:32130408, PubMed:7604027, PubMed:7754385). 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:7604027, PubMed:7754385). 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. 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. Mediator of PR-DUB complex component BAP1 nuclear import; acts redundantly with KPNA1 and Transportin-1/TNPO1 (PubMed:35446349).

Cellular Location Cytoplasm. Nucleus

Tissue Location Expressed ubiquitously.

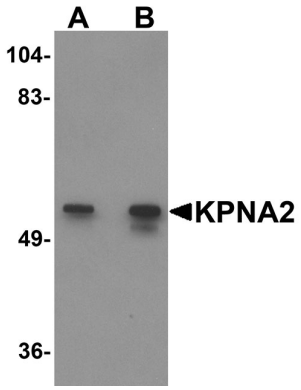
Background

KPNA2 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. KPNA2 is the alpha subunit 2 of karyopherin, which forms a complex with importin subunit beta-1 and functions as a cargo carrier that transports various complexes from cytoplasm into nucleus. It is ubiquitously expressed and contains an IBB/importin beta domain, ten Armadillo repeats that bind "cargo" and three intervening nuclear localization sequences (NLSs). It has recently been reported to play an important role in tumorigenesis and tumor progression.

References

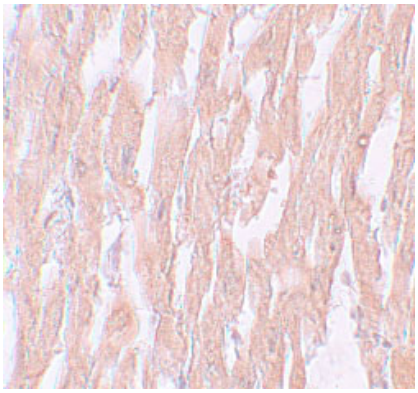
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Gilchrist D and Rexach M. Molecular basis for the rapid dissociation of nuclear localization signals from karyopherin alpha in the nucleoplasm. J. Biol. Chem.2003; 278: 51937-49.
Tseng SF, Chang CY, Wu KJ, et al. Importin KPNA2 is required for proper nuclear localization and multiple functions of NBS1. J. Biol. Chem.2005; 280:39594-600.
Sakai M, Sohda M, Miyazaki T, et al. Significance of karyopherin-{alpha} 2 (KPNA2) expression in esophageal squamous cell carcinoma. Anticancer Res.2010; 30:851-6.

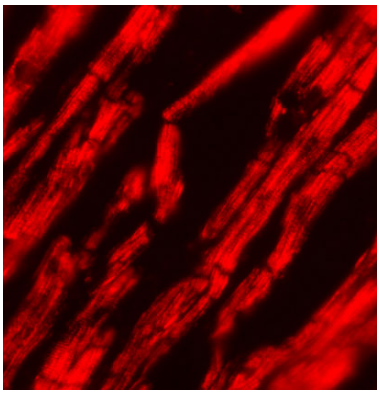
Images



Western blot analysis of KPNA2 in rat heart tissue lysate with KPNA2 antibody at (A) 1 and (B) 2 µg/mL.

Immunohistochemistry of KPNA2 in human heart tissue with KPNA2 antibody at 5 µg/mL.





Immunofluorescence of KPNA2 in human heart tissue with KPNA2 antibody at 20 µg/mL.

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