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KPNA2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2205a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	P52292
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Clone Names	1E8B7
Isotype	IgG1
Calculated MW	57862
Description	The import of proteins into the nucleus is a process that involves at least 2 steps. The first is an energy-independent docking of the protein to the nuclear envelope and the second is an energy-dependent translocation through the nuclear pore complex. Imported proteins require a nuclear localization sequence (NLS) which generally consists of a short region of basic amino acids or 2 such regions spaced about 10 amino acids apart. Proteins involved in the first step of nuclear import have been identified in different systems. These include the Xenopus protein importin and its yeast homolog, SRP1 (a suppressor of certain temperature-sensitive mutations of RNA polymerase I in Saccharomyces cerevisiae), which bind to the NLS. KPNA2 protein interacts with the NLSs of DNA helicase Q1 and SV40 T antigen and may be involved in the nuclear transport of proteins. KPNA2 also may play a role in V(D)J recombination.
Immunogen	Purified recombinant fragment of human KPNA2 (AA: 1-530) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	3838
Other Names	Importin subunit alpha-1, Karyopherin subunit alpha-2, RAG cohort protein 1, SRP1-alpha, KPNA2, RCH1, SRP1
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
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.

References

1.Mod Pathol. 2014 Jan;27(1):96-106.2.PLoS One. 2013;8(3):e57911.

Images

