

**Goat Anti-KPNA2 / IPOA1 Antibody**  
**Peptide-affinity purified goat antibody**  
**Catalog # AF1602a****Specification**

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**Goat Anti-KPNA2 / IPOA1 Antibody - Product Information**

Application	WB, IF, E
Primary Accession	<a href="#">P52292</a>
Other Accession	<a href="#">NP_002257</a> , <a href="#">3838</a> , <a href="#">16647 (mouse)</a> , <a href="#">85245 (rat)</a>
Reactivity	Human
Predicted	Mouse, Rat, Dog
Host	Goat
Clonality	Polyclonal
Concentration	0.5 mg/ml
Isotype	IgG
Calculated MW	57862

**Goat Anti-KPNA2 / IPOA1 Antibody - 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~~1:1000  
IF~~1:50~200  
E~~N/A**Format**

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

**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**

Goat Anti-KPNA2 / IPOA1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Goat Anti-KPNA2 / IPOA1 Antibody - Protein Information****Name** KPNA2 ([HGNC:6395](#))**Synonyms** RCH1, SRP1

### Function

Functions in nuclear protein import as an adapter protein for nuclear receptor KPNB1 (PubMed:<a href="http://www.uniprot.org/citations/28991411" target="\_blank">28991411</a>, PubMed:<a href="http://www.uniprot.org/citations/32130408" target="\_blank">32130408</a>, PubMed:<a href="http://www.uniprot.org/citations/7604027" target="\_blank">7604027</a>, PubMed:<a href="http://www.uniprot.org/citations/7754385" target="\_blank">7754385</a>). Binds specifically and directly to substrates containing either a simple or bipartite NLS motif (PubMed:<a href="http://www.uniprot.org/citations/28991411" target="\_blank">28991411</a>, PubMed:<a href="http://www.uniprot.org/citations/32130408" target="\_blank">32130408</a>, PubMed:<a href="http://www.uniprot.org/citations/7604027" target="\_blank">7604027</a>, PubMed:<a href="http://www.uniprot.org/citations/7754385" target="\_blank">7754385</a>). 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:<a href="http://www.uniprot.org/citations/7604027" target="\_blank">7604027</a>, PubMed:<a href="http://www.uniprot.org/citations/7754385" target="\_blank">7754385</a>). 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:<a href="http://www.uniprot.org/citations/35446349" target="\_blank">35446349</a>).

### Cellular Location

Cytoplasm. Nucleus

### Tissue Location

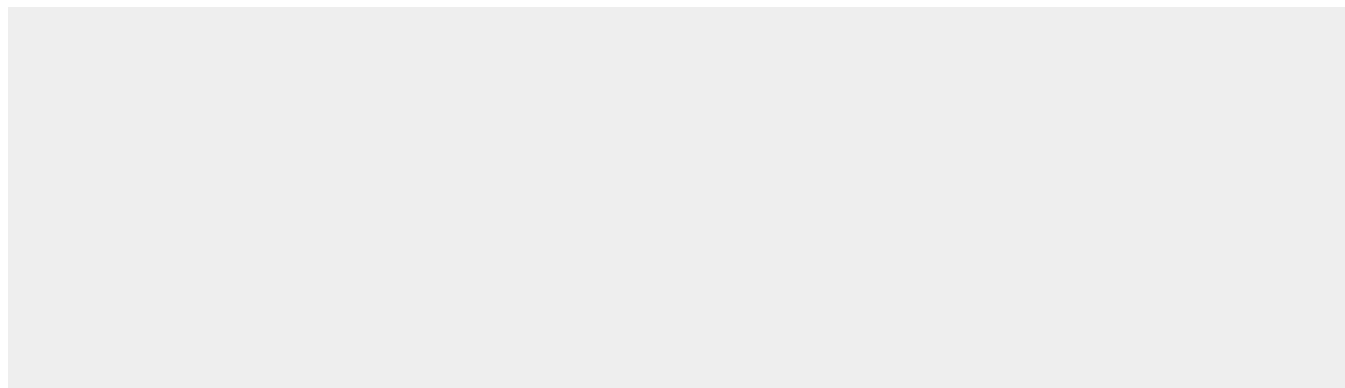
Expressed ubiquitously.

### Goat Anti-KPNA2 / IPOA1 Antibody - 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](#)

### Goat Anti-KPNA2 / IPOA1 Antibody - Images





AF1602a staining (0.1  $\mu\text{g/ml}$ ) of HeLa lysate (RIPA buffer, 35  $\mu\text{g}$  total protein per lane). Primary incubated for 1 hour. Detected by western blot using chemiluminescence.



AF1602a staining (top panel and green) of 4% formaldehyde-fixed HeLa with endogenously expressed Histone H2B-GFP fusion as DNA marker (mid panel and red). Data kindly provided by Francisco Iborra, MRC Mol. Haematol. Unit, Oxford.

#### Goat Anti-KPNA2 / IPOA1 Antibody - Background

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

#### Goat Anti-KPNA2 / IPOA1 Antibody - References

Significance of karyopherin- $\alpha$  2 (KPNA2) expression in esophageal squamous cell carcinoma. Sakai M, et al. Anticancer Res, 2010 Mar. PMID 20393006.

Identification of importin  $\alpha$ 1 as a novel constituent of RNA stress granules. Fujimura K, et al. Biochim Biophys Acta, 2010 Jul. PMID 20362631.

Inhibition of HIV-1 integrase nuclear import and replication by a peptide bearing integrase putative nuclear localization signal. Levin A, et al. Retrovirology, 2009 Dec 5. PMID 19961612.

Single nucleotide polymorphisms in miRNA binding sites and miRNA genes as breast/ovarian cancer risk modifiers in Jewish high-risk women. Kontorovich T, et al. Int J Cancer, 2010 Aug 1. PMID 19950226.

Specificity of Hexim1 and Hexim2 complex formation with cyclin T1/T2, importin  $\alpha$  and 7SK snRNA. Czudnochowski N, et al. J Mol Biol, 2010 Jan 8. PMID 19883659.