

**Goat Anti-Karyopherin (importin) beta 1 Antibody**  
Peptide-affinity purified goat antibody  
Catalog # AF1581a

### Specification

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### Goat Anti-Karyopherin (importin) beta 1 Antibody - Product Information

Application	WB, IHC, IF, FC
Primary Accession	<a href="#">Q14974</a>
Other Accession	<a href="#">NP_002256</a> , <a href="#">3837</a> , <a href="#">16211 (mouse)</a> , <a href="#">24917 (rat)</a>
Reactivity	Human
Predicted	Mouse, Rat, Dog
Host	Goat
Clonality	Polyclonal
Concentration	100ug/200ul
Isotype	IgG
Calculated MW	97170

### Goat Anti-Karyopherin (importin) beta 1 Antibody - Additional Information

**Gene ID** 3837

#### Other Names

Importin subunit beta-1, Importin-90, Karyopherin subunit beta-1, Nuclear factor p97, Pore targeting complex 97 kDa subunit, PTAC97, KPNB1, NTF97

#### 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-Karyopherin (importin) beta 1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Goat Anti-Karyopherin (importin) beta 1 Antibody - Protein Information

**Name** KPNB1

**Synonyms** NTF97

#### Function

Functions in nuclear protein import, either in association with an adapter protein, like an importin-alpha subunit, which binds to nuclear localization signals (NLS) in cargo substrates, or by acting as autonomous nuclear transport receptor (PubMed:<a

href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>, PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/20818336" target="\_blank">20818336</a>, PubMed:<a href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>, PubMed:<a href="http://www.uniprot.org/citations/7615630" target="\_blank">7615630</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</a>). Acting autonomously, serves itself as NLS receptor (PubMed:<a href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>, PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/20818336" target="\_blank">20818336</a>, PubMed:<a href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>, PubMed:<a href="http://www.uniprot.org/citations/7615630" target="\_blank">7615630</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</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/10228156" target="\_blank">10228156</a>, PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/20818336" target="\_blank">20818336</a>, PubMed:<a href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>, PubMed:<a href="http://www.uniprot.org/citations/7615630" target="\_blank">7615630</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</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 (PubMed:<a href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>, PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/20818336" target="\_blank">20818336</a>, PubMed:<a href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>, PubMed:<a href="http://www.uniprot.org/citations/7615630" target="\_blank">7615630</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</a>). 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:<a href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>, PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>, PubMed:<a href="http://www.uniprot.org/citations/7615630" target="\_blank">7615630</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</a>). Mediates autonomously the nuclear import of ribosomal proteins RPL23A, RPS7 and RPL5 (PubMed:<a href="http://www.uniprot.org/citations/11682607" target="\_blank">11682607</a>, PubMed:<a href="http://www.uniprot.org/citations/9687515" target="\_blank">9687515</a>). In association with IPO7, mediates the nuclear import of H1 histone (PubMed:<a href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>). In vitro, mediates nuclear import of H2A, H2B, H3 and H4 histones (By similarity). Imports MRTFA, SNAI1 and PRKCI into the nucleus (PubMed:<a href="http://www.uniprot.org/citations/11891849" target="\_blank">11891849</a>, PubMed:<a href="http://www.uniprot.org/citations/19386897" target="\_blank">19386897</a>, PubMed:<a href="http://www.uniprot.org/citations/20818336" target="\_blank">20818336</a>, PubMed:<a href="http://www.uniprot.org/citations/10228156" target="\_blank">10228156</a>).

href="http://www.uniprot.org/citations/24699649" target="\_blank">24699649</a>).

### Cellular Location

Cytoplasm. Nucleus envelope

### Goat Anti-Karyopherin (importin) beta 1 Antibody - Protocols

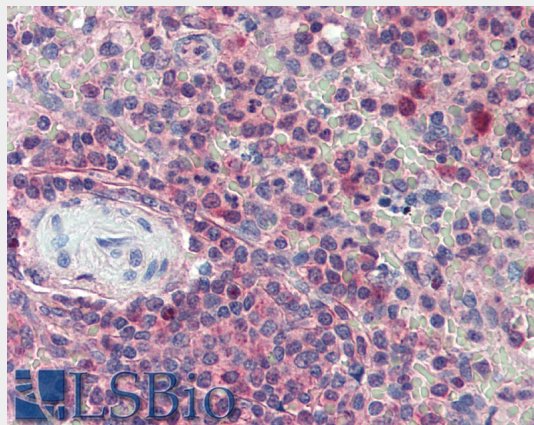
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

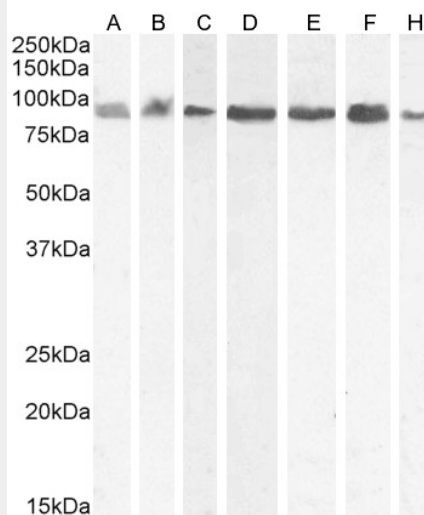
### Goat Anti-Karyopherin (importin) beta 1 Antibody - Images



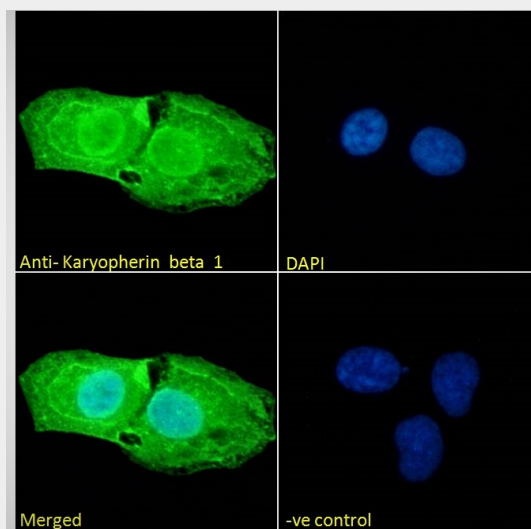
AF1581a (0.03 µg/ml) staining of Daudi cell lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



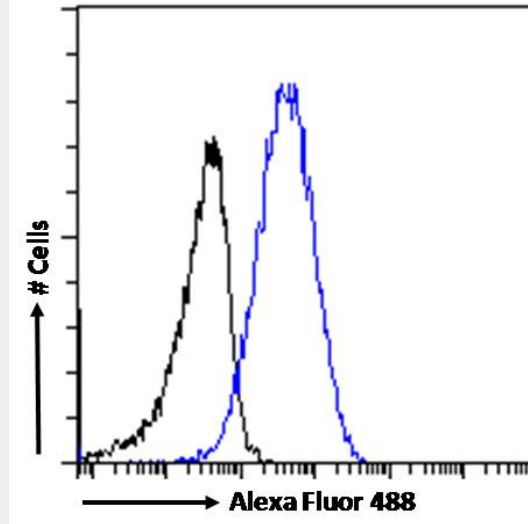
EB07018 (5µg/ml) staining of paraffin embedded Human Spleen. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.



EB07018 (0.03 $\mu$ g/ml) staining of A431 (A), HEK293 (B), Jurkat (C), (0.01 $\mu$ g/ml) Daudi (D), HeLa (E) and (0.1 $\mu$ g/ml) Kelly (F) and KNRK (G) cell lysate (35 $\mu$ g protein in RIPA buffer). Detected by chemiluminescence.



EB07018 Immunofluorescence analysis of paraformaldehyde fixed U2OS cells, permeabilized with 0.15% Triton. Primary incubation 1hr (10 $\mu$ g/ml) followed by Alexa Fluor 488 secondary antibody (2 $\mu$ g/ml), showing nuclear membrane, nuclear and cytoplasmic staining



EB07018 Flow cytometric analysis of paraformaldehyde fixed A431 cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (1ug/ml). IgG control: Unimmunized goat IgG (black line) fo

#### **Goat Anti-Karyopherin (importin) beta 1 Antibody - Background**

Nucleocytoplasmic transport, a signal- and energy-dependent process, takes place through nuclear pore complexes embedded in the nuclear envelope. The import of proteins containing a nuclear localization signal (NLS) requires the NLS import receptor, a heterodimer of importin alpha and beta subunits also known as karyopherins. Importin alpha binds the NLS-containing cargo in the cytoplasm and importin beta docks the complex at the cytoplasmic side of the nuclear pore complex. In the presence of nucleoside triphosphates and the small GTP binding protein Ran, the complex moves into the nuclear pore complex and the importin subunits dissociate. Importin alpha enters the nucleoplasm with its passenger protein and importin beta remains at the pore. Interactions between importin beta and the FG repeats of nucleoporins are essential in translocation through the pore complex. The protein encoded by this gene is a member of the importin beta family.

#### **Goat Anti-Karyopherin (importin) beta 1 Antibody - References**

- Aire's partners in the molecular control of immunological tolerance. Abramson J, et al. *Cell*, 2010 Jan 8. PMID 20085707.
- Inhibition of the calcineurin-NFAT signalling cascade in the treatment of heart failure. Panther F, et al. *Recent Pat Cardiovasc Drug Discov*, 2009 Nov. PMID 19925438.
- Remodeling of the pioneer translation initiation complex involves translation and the karyopherin importin beta. Sato H, et al. *Genes Dev*, 2009 Nov 1. PMID 19884259.
- The Karyopherin proteins, Crm1 and Karyopherin beta1, are overexpressed in cervical cancer and are critical for cancer cell survival and proliferation. van der Watt PJ, et al. *Int J Cancer*, 2009 Apr 15. PMID 19117056.
- Genome-wide analysis identifies 16q deletion associated with survival, molecular subtypes, mRNA expression, and germline haplotypes in breast cancer patients. Nordgard SH, et al. *Genes Chromosomes Cancer*, 2008 Aug. PMID 18398821.