

## Technical Data Sheet

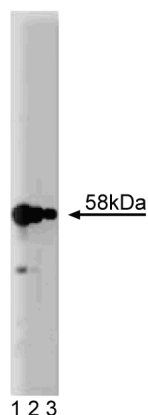
**Purified Mouse Anti-Karyopherin  $\alpha$** **Product Information**

<b>Material Number:</b>	<b>610486</b>
<b>Alternate Name:</b>	Rch-1
<b>Size:</b>	150 $\mu$ g
<b>Concentration:</b>	250 $\mu$ g/ml
<b>Clone:</b>	2/Karyopherin $\alpha$
<b>Immunogen:</b>	Human Rch-1 aa. 254-497
<b>Isotype:</b>	Mouse IgG1
<b>Reactivity:</b>	QC Testing: Human Tested in Development: Mouse, Rat, Dog, Drosophila
<b>Target MW:</b>	58 kDa
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA, glycerol, and $\leq 0.09\%$ sodium azide.

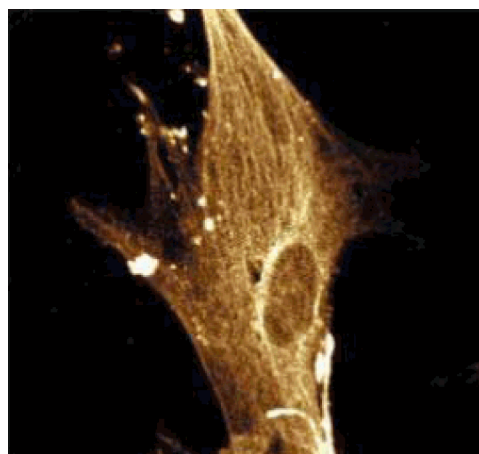
**Description**

The two step process of importing proteins into the nucleus involves the binding and interaction of several cytosolic and nuclear pore proteins. Proteins to be translocated into the nucleus contain a nuclear localization sequence (NLS) which is recognized and bound by carrier proteins in the cytosol. Heterodimers belonging to a highly conserved family of proteins called karyopherins are required for successful nuclear localization of cytosolic proteins. The  $\alpha$ -subunits appear to function in the binding of NLS (both simple and bitartite NLS motifs), but both  $\alpha$ - and  $\beta$ -subunits are required for successful docking to the nuclear envelope. ATP is required for complete translocation of proteins into the nucleus. Karyopherin  $\alpha 2$  was first identified as Rch-1, an NLS receptor which interacts with the RAG-1 recombination-activating protein in developing B and T cells. Rch-1 has been reported to be 44% identical to karyopherin  $\alpha 1$  (hSRP-1 /NPI-1).

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



**Western blot analysis of Karyopherin  $\alpha$  on a HeLa cell lysate (Human cervical epitheloid carcinoma; ATCC CCL-2.2).** Lane 1: 1:2500, lane 2: 1:5000, lane 3: 1:10,000 dilution of the mouse anti-karyopherin antibody.



**Immunofluorescence staining of WI-38 cells (Human lung fibroblasts; ATCC CCL-75).**

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## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at -20° C.

## Application Notes

### Application

Western blot	Routinely Tested
Immunoprecipitation	Tested During Development
Immunofluorescence	Tested During Development
Immunohistochemistry	Tested During Development

### Recommended Assay Procedure:

**Western blot:** Please refer to [http://www.bdbiosciences.com/pharming/en/protocols/Western\\_Blotting.shtml](http://www.bdbiosciences.com/pharming/en/protocols/Western_Blotting.shtml)

## Suggested Companion Products

Catalog Number	Name	Size	Clone
611449	HeLa Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Igs (Multiple Adsorption)	0.5 mg	Polyclonal

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [www.bdbiosciences.com/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/protocols) for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References

Cuomo CA, Kirch SA, Gyuris J, Brent R, Oettinger MA. Rch1, a protein that specifically interacts with the RAG-1 recombination-activating protein. *Proc Natl Acad Sci U S A*. 1994; 91(13):6156-6160.(Biology)

Grozinger CM, Schreiber SL. Regulation of histone deacetylase 4 and 5 and transcriptional activity by 14-3-3-dependent cellular localization. *Proc Natl Acad Sci U S A*. 2000; 97(14):7835-7840.(Biology: Western blot)

Moroianu J, Hijikata M, Blobel G, Radu A. Mammalian karyopherin alpha 1 beta and alpha 2 beta heterodimers: alpha 1 or alpha 2 subunit binds nuclear localization signal and beta subunit interacts with peptide repeat-containing nucleoporins. *Proc Natl Acad Sci U S A*. 1995; 92(14):6532-6536.(Biology)

Weis K, Mattaj JW, Lamond AI. Identification of hSRP1 alpha as a functional receptor for nuclear localization sequences. *Science*. 1995; 268(5213):1049-1053. (Biology)

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