

karyopherin β 1 (C-19): sc-1863

BACKGROUND

Protein transport across the nucleus is a selective, multistep process involving several cytoplasmic factors. Proteins must be recognized as import substrates, dock at the nuclear pore complex and translocate across the nuclear envelope in an ATP-dependent fashion. Two cytosolic factors centrally involved in the recognition and docking process are the karyopherin α 1 and karyopherin β 1 subunits. Karyopherin α 1 functions in the recognition and targeting of substrates destined for nuclear import, while karyopherin β 1 serves as an adapter, tethering the karyopherin α 1/substrate complex to docking proteins on the nuclear envelope termed nucleoporins. Karyopherin α 2 has been shown to complex with Epstein-Barr virus nuclear antigen 1 (EBNA1). Certain RNA-binding proteins are imported to the nucleus by karyopherin β 2, and karyopherin β 3 appears to be involved in the import of some ribosomal proteins.

CHROMOSOMAL LOCATION

Genetic locus: KPNB1 (human) mapping to 17q21.32; Kpnbl (mouse) mapping to 11 D.

SOURCE

karyopherin β 1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of karyopherin β 1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1863 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

karyopherin β 1 (C-19) is recommended for detection of karyopherin β 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

karyopherin β 1 (C-19) is also recommended for detection of karyopherin β 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for karyopherin β 1 siRNA (h): sc-35736, karyopherin β 1 siRNA (m): sc-35735, karyopherin β 1 shRNA Plasmid (h): sc-35736-SH, karyopherin β 1 shRNA Plasmid (m): sc-35735-SH, karyopherin β 1 shRNA (h) Lentiviral Particles: sc-35736-V and karyopherin β 1 shRNA (m) Lentiviral Particles: sc-35735-V.

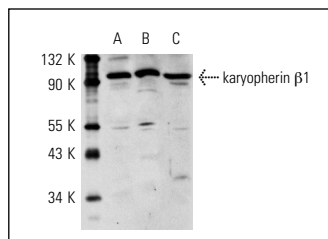
Molecular Weight of karyopherin β 1: 97 kDa.

Positive Controls: MDCK cell lysate: sc-2252, BJAB whole cell lysate: sc-2207 or Jurkat whole cell lysate: sc-2204.

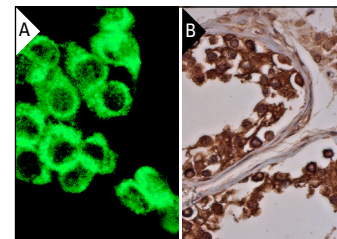
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



karyopherin β 1 (C-19): sc-1863. Western blot analysis of karyopherin β 1 expression in BJAB (A), Jurkat (B) and MDCK (C) whole cell lysates.



karyopherin β 1 (C-19): sc-1863. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic and nuclear envelope localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and nuclear staining of cells in seminiferous ducts and Leydig cells (B).

SELECT PRODUCT CITATIONS

- Hanz, S., et al. 2003. Axoplasmic importins enable retrograde injury signaling in lesioned nerve. *Neuron* 40: 1095-1104.
- Philips, A.S., et al. 2007. Analysis of the signals and mechanisms mediating nuclear trafficking of GATA-4: loss of DNA binding is associated with localization in intranuclear speckles. *J. Biol. Chem.* 282: 24915-24927.
- Pickard, B.W., et al. 2007. Type 1 parathyroid hormone receptor (PTH1R) nuclear trafficking: regulation of PTH1R nuclear-cytoplasmic shuttling by Importin α/β and chromosomal region maintenance 1/Exportin 1. *Endocrinology* 148: 2282-2289.
- Kitagawa, Y., et al. 2008. Inhibitory function of adapter-related protein complex 2 α 1 subunit in the process of nuclear translocation of human immunodeficiency virus type 1 genome. *Virology* 373: 171-180.
- Hamada, M., et al. 2011. Ran-dependent docking of importin- β to RanBP2/Nup358 filaments is essential for protein import and cell viability. *J. Cell Biol.* 194: 597-612.
- Gaffre, M., et al. 2011. A critical balance between Cyclin B synthesis and Myt1 activity controls meiosis entry in *Xenopus* oocytes. *Development* 138: 3735-3744.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS
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Try **karyopherin β 1 (H-7): sc-137016** or **karyopherin β 1 (E-7): sc-365299**, our highly recommended monoclonal alternatives to karyopherin β 1 (C-19).