SANTA CRUZ BIOTECHNOLOGY, INC.

karyopherin α2 (1A6): sc-101538

BACKGROUND

Protein transport across the nucleus is a selective, multi-step 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 α1 and karyopherin β1 subunits. Karyopherin α1 functions in the recognition and targeting of substrates destined for nuclear import, while karyopherin β1 serves as an adapter, tethering the karyopherin α1/substrate complex to docking proteins on the nuclear envelope, termed nucleoporins. Karyopherin α2 has been shown to complex with Epstein-Barr virus nuclear antigen 1 (EBNA-1). Certain RNA-binding proteins are imported to the nucleus by karyopherin β2, and karyopherin β3 appears to be involved in the import of some ribosomal proteins.

REFERENCES

1. Moroianu, J., et al. 1995. Previously identified protein of uncertain function is karyopherin α and together with karyopherin β docks import substrate at nuclear pore complexes. Proc. Natl. Acad. Sci. USA 92: 2008-2011.
2. Moroianu, J., et al. 1995. Protein export from the nucleus requires the GTPase Ran and GTP hydrolysis. Proc. Natl. Acad. Sci. USA 92: 4318-4322.
3. Lounsbury, K.M., et al. 1996. Ran binding domains promote the interaction of Ran with p97/karyopherin β, linking the docking and translocation steps of nuclear import. J. Biol. Chem. 271: 2357-2360.
4. Moroianu, J., et al. 1996. The binding site of karyopherin α for karyopherin β overlaps with a nuclear localization sequence. Proc. Natl. Acad. Sci. USA 93: 6572-6576.
5. Moroianu, J., et al. 1996. Nuclear protein import: Ran-GTP dissociates the karyopherin α/β heterodimer by displacing α from an overlapping binding site on β. Proc. Natl. Acad. Sci. USA 93: 7059-7062.
6. Fischer, N., et al. 1997. Epstein-Barr virus nuclear antigen 1 forms a complex with the nuclear transporter karyopherin α2. J. Biol. Chem. 272: 3999-4005.
7. Yaseen, N.R., et al. 1997. Cloning and characterization of human karyopherin β3. Proc. Natl. Acad. Sci. USA 94: 4451-4456.

CHROMOSOMAL LOCATION

Genetic locus: KPNA2 (human) mapping to 17q24.2; Kpna2 (mouse) mapping to 11 E1.

SOURCE

karyopherin α2 (1A6) is a rat monoclonal antibody raised against full-length karyopherin α2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

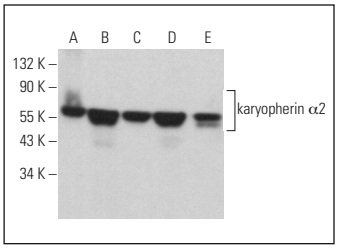
karyopherin α2 (1A6) is recommended for detection of karyopherin α2of mouse, rat, human and simian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for karyopherin α2 siRNA (h): sc-35741, karyopherin α2 siRNA (m): sc-35742, karyopherin α2 shRNA Plasmid (h): sc-35741-SH, karyopherin α2 shRNA Plasmid (m): sc-35742-SH, karyopherin α2 shRNA (h) Lentiviral Particles: sc-35741-V and karyopherin α2 shRNA (m) Lentiviral Particles: sc-35742-V.

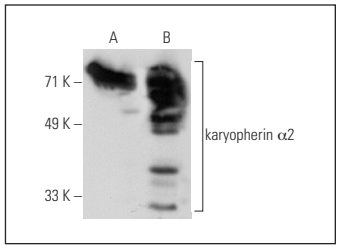
Molecular Weight of karyopherin α2: 58 kDa.

Positive Controls: karyopherin α2 (h): 293T Lysate: sc-116432, BJAB whole cell lysate: sc-2207 or Jurkat whole cell lysate: sc-2204.

DATA



karyopherin α2 (1A6): sc-101538. Western blot analysis of karyopherin α2 expression in HeLa nuclear extract (**A**) and Jurkat (**B**), MCF7 (**C**), BJAB (**D**) and Hep G2 (**E**) whole cell lysates.



karyopherin α2 (1A6): sc-101538. Western blot analysis of karyopherin α2 expression in non-transfected: sc-117752 (**A**) and human karyopherin α2 transfected: sc-116432 (**B**) 293T whole cell lysates.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **karyopherin α2 (B-9): sc-55538** for karyopherin α2 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.