SANTA CRUZ BIOTECHNOLOGY, INC.

karyopherin α2 (h): 293T Lysate: sc-116432

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 (EBNA1). 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/β-karyopherin, 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.
8. Bonifaci, N., et al.1997. Karyopherin β2 mediates nuclear import of a mRNA binding protein. Proc. Natl. Acad. Sci. USA 94: 5055-5060.

CHROMOSOMAL LOCATION

Genetic locus: KPNA2 (human) mapping to 17q24.2.

PRODUCT

karyopherin α2 (h): 293T Lysate represents a lysate of human karyopherin α2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

karyopherin α2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive karyopherin α2 antibodies. Recommended use: 10-20 µl per lane.

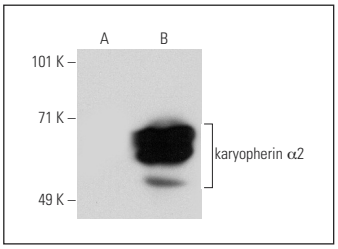
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Either karyopherin α2 (B-9): sc-55538 is recommended as a positive control antibody for Western Blot analysis of enhanced human karyopherin α2 expression in karyopherin α2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

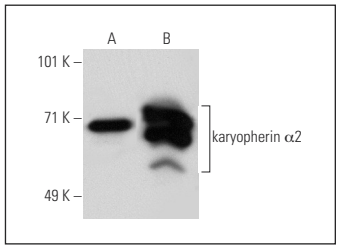
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



karyopherin α2 (B-9): sc-55538. 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.



karyopherin α2 (G-11): sc-55537. 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.

RESEARCH USE

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

PROTOCOLS

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