



karyopherin β 3 (h): 293T Lysate: sc-173029

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 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 (EBNA-1). 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.

REFERENCES

1. Moroianu, J., Blobel, G. and Radu, A. 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. and Blobel, G. 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., Richards, S.A., Perlungher, R.R. and Macara, I.G. 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., Blobel, G. and Radu, A. 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., Blobel, G. and Radu, A. 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., Kremmer, E., Lautscham, G., Mueller-Lantzsch, N. and Grasser, R.A. 1997. Epstein-Barr virus nuclear antigen 1 forms a complex with the nuclear transporter karyopherin α 2. *J. Biol. Chem.* 272: 3999-4005.
7. Yaseen, N.R. and Blobel, G. 1997. Cloning and characterization of human karyopherin β 3. *Proc. Natl. Acad. Sci. USA* 94: 4451-4456.
8. Bonifaci, N., Moroianu, J., Radu, A. and Blobel, G. 1997. Karyopherin β 2 mediates nuclear import of a mRNA binding protein. *Proc. Natl. Acad. Sci. USA* 94: 5055-5060.

CHROMOSOMAL LOCATION

Genetic locus: IPO5 (human) mapping to 13q32.2.

PRODUCT

karyopherin β 3 (h): 293T Lysate represents a lysate of human karyopherin β 3 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

karyopherin β 3 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive karyopherin β 3 antibodies. Recommended use: 10-20 μ l per lane.

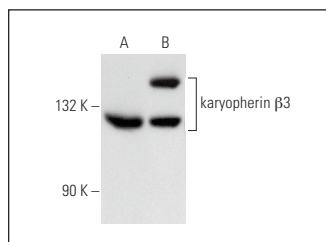
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

karyopherin β 3 (B-7): sc-55527 is recommended as a positive control antibody for Western Blot analysis of enhanced human karyopherin β 3 expression in karyopherin β 3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

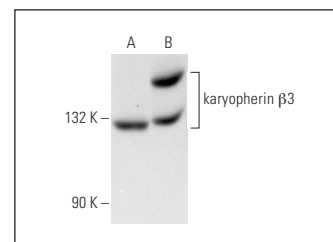
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 β 3 (B-7): sc-55527. Western blot analysis of karyopherin β 3 expression in non-transfected: sc-117752 (A) and human karyopherin β 3 transfected: sc-173029 (B) 293T whole cell lysates.



karyopherin β 3 (H-4): sc-17802. Western blot analysis of karyopherin β 3 expression in non-transfected: sc-117752 (A) and human karyopherin β 3 transfected: sc-173029 (B) 293T whole cell lysates.

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.

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.