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karyopherin α6 (h): 293 Lysate: sc-113217

BACKGROUND

Protein transport across the nucleus is a selective, multi-step process involving several cytoplasmic factors that mediate protein passage through the nuclear pore complex (NPC). Cytoplasmic proteins that contain nuclear localization signals (NLSs) must be recognized as import substrates, dock at the nuclear pore complex and translocate across the nuclear envelope in an ATP-dependent fashion. Karyopherin α1 and karyopherin α6 are widely expressed nuclear import proteins that act as adaptors for karyopherin β1, specifically binding to and guiding NLS-containing proteins to the NPC. Both karyopherin α1 and karyopherin α6 contain one IBB domain and ten ARM repeats through which they convey their protein binding and localization function. Together, karyopherin α1 and karyopherin α6 are responsible for ensuring the nuclear import of NLS-containing substrates.

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.
8. Bonifaci, N., et al. 1997. Karyopherin β2 mediates nuclear import of a mRNA binding protein. Proc. Natl. Acad. Sci. USA 94: 5055-5060.
9. Reid, S.P., et al. 2006. Ebola virus VP24 binds karyopherin α1 and blocks Stat1 nuclear accumulation. J. Virol. 80: 5156-5167.

CHROMOSOMAL LOCATION

Genetic locus: KPNA6 (human) mapping to 1p35.1.

PRODUCT

karyopherin α6 (h): 293 Lysate represents a lysate of human karyopherin α6 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

karyopherin α6 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive karyopherin α6 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

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.

PROTOCOLS

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