SANTA CRUZ BIOTECHNOLOGY, INC.

karyopherin α1 (H-58): sc-292777

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The Power to Question

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

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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.
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7. Yaseen, N.R., et al. 1997. Cloning and characterization of human karyopherin β3. Proc. Natl. Acad. Sci. USA 94: 4451-4456.
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CHROMOSOMAL LOCATION

Genetic locus: KPNA1 (human) mapping to 3q21.1; Kpna1 (mouse) mapping to 16 B3.

SOURCE

karyopherin α1 (H-58) is a rabbit polyclonal antibody raised against amino acids 48-105 mapping near the N-terminus of karyopherin α1 of human origin.

PRODUCT

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

APPLICATIONS

karyopherin α1 (H-58) is recommended for detection of karyopherin α1 of mouse, rat and human 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).

karyopherin α1 (H-58) is also recommended for detection of karyopherin α1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for karyopherin α1 siRNA (h): sc-41277, karyopherin α1 siRNA (m): sc-41278, karyopherin α1 shRNA Plasmid (h): sc-41277-SH, karyopherin α1 shRNA Plasmid (m): sc-41278-SH, karyopherin α1 shRNA (h) Lentiviral Particles: sc-41277-V and karyopherin α1 shRNA (m) Lentiviral Particles: sc-41278-V.

Molecular Weight of karyopherin α1: 60 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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 or our catalog for detailed protocols and support products.