SANTA CRUZ BIOTECHNOLOGY, INC.

karyopherin α2 (G-11): sc-55537

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Protein transport across the nucleus is a selective, multistep 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. and Blobel, G. 1995. Protein export from the nucleus requires the GTPase Ran and GTP hydrolysis. Proc. Natl. Acad. Sci. USA 92: 4318-4322.

CHROMOSOMAL LOCATION

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

SOURCE

karyopherin α2 (G-11) is a mouse monoclonal antibody raised against amino acids 480-529 of karyopherin α2 of human origin.

PRODUCT

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

APPLICATIONS

karyopherin α2 (G-11) is recommended for detection of karyopherin α2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

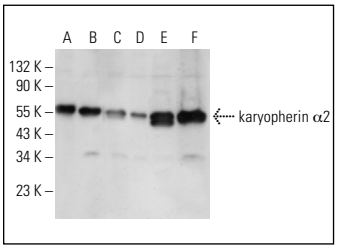
Molecular Weight of karyopherin α2: 52 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, NIH/3T3 whole cell lysate: sc-2210 or A-375 cell lysate: sc-3811.

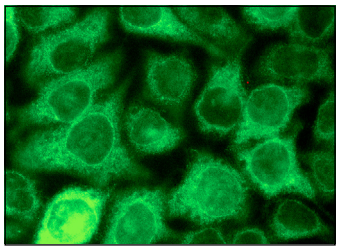
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



karyopherin α2 (G-11): sc-55537. Western blot analysis of karyopherin α2 expression in HeLa nuclear extract (**A**) and A-375 (**B**), NIH/3T3 (**C**), RAW 264.7 (**D**), KNRK (**E**) and 3611-RF (**F**) whole cell lysates.



karyopherin α2 (G-11): sc-55537. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Guo, H., et al. 2012. Production and function of the cytoplasmic deproteinized relaxed circular DNA of hepadnaviruses. J. Virol. 84: 387-396.
2. Song, K.H., et al. 2019. Inhibition of karyopherin-α2 augments radiation-induced cell death by perturbing BRCA1-mediated DNA repair. Int. J. Mol. Sci. 20: 2843.
3. He, J., et al. 2020. Zika virus NS2A protein induces the degradation of KPNA2 (karyopherin subunit α 2) via chaperone-mediated autophagy. Autophagy 16: 2238-2251.

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 for detailed protocols and support products.

CONJUGATES

See **karyopherin α2 (B-9): sc-55538** for karyopherin α2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.