SANTA CRUZ BIOTECHNOLOGY, INC.

karyopherin β2 (D45): sc-32314

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. 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: TNPO1 (human) mapping to 5q13.2; Tnpo1 (mouse) mapping to 13 D1.

SOURCE

karyopherin β2 (D45) is a mouse monoclonal antibody raised against recombinant human his-karyopherin β2.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

karyopherin β2 (D45) is recommended for detection of karyopherin β2 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for karyopherin β2 siRNA (h): sc-35737, karyopherin β2 siRNA (m): sc-35738, karyopherin β2 shRNA Plasmid (h): sc-35737-SH, karyopherin β2 shRNA Plasmid (m): sc-35738-SH, karyopherin β2 shRNA (h) Lentiviral Particles: sc-35737-V and karyopherin β2 shRNA (m) Lentiviral Particles: sc-35738-V.

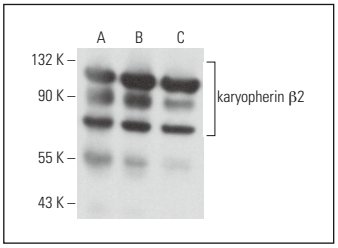
Molecular Weight of karyopherin β2: 55-97 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, SW480 cell lysate: sc-2219 or CCRF-CEM cell lysate: sc-2225.

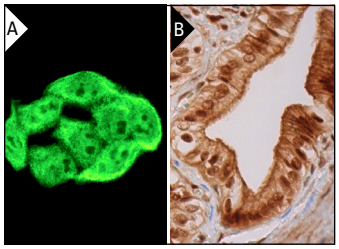
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



karyopherin β2 (D45): sc-32314. Western blot analysis of karyopherin β2 expression in HEK293 (**A**), SW480 (**B**) and CCRF-CEM (**C**) whole cell lysates.



karyopherin β2 (D45): sc-32314. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic, membrane and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Gasnereau, I., et al. 2012. KIF20A mRNA and its product MKlp2 are increased during hepatocyte proliferation and hepatocarcinogenesis. Am. J. Pathol. 180: 131-140.
2. Li, J., et al. 2019. Antiviral activity of a purine synthesis enzyme reveals a key role of deamidation in regulating protein nuclear import. Sci. Adv. 5: eaaw7373.

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.