

karyopherin $\alpha 2$ (8G5): sc-136204

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 $\alpha 1$ and karyopherin $\beta 1$ subunits. Karyopherin $\alpha 1$ functions in the recognition and targeting of substrates destined for nuclear import, while karyopherin $\beta 1$ serves as an adapter, tethering the karyopherin $\alpha 1$ /substrate complex to docking proteins on the nuclear envelope termed nucleoporins. Karyopherin $\alpha 2$ has been shown to complex with Epstein-Barr virus nuclear antigen 1 (EBNA1). Certain RNA-binding proteins are imported to the nucleus by karyopherin $\beta 2$, and karyopherin $\beta 3$ appears to be involved in the import of some ribosomal proteins.

REFERENCES

- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

karyopherin $\alpha 2$ (8G5) is a mouse monoclonal antibody raised against a recombinant protein of karyopherin $\alpha 2$ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

karyopherin $\alpha 2$ (8G5) is available conjugated to agarose (sc-136204 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136204 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136204 PE), fluorescein (sc-136204 FITC), Alexa Fluor[®] 488 (sc-136204 AF488), Alexa Fluor[®] 546 (sc-136204 AF546), Alexa Fluor[®] 594 (sc-136204 AF594) or Alexa Fluor[®] 647 (sc-136204 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-136204 AF680) or Alexa Fluor[®] 790 (sc-136204 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

karyopherin $\alpha 2$ (8G5) is recommended for detection of karyopherin $\alpha 2$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 $\alpha 2$ siRNA (h): sc-35741, karyopherin $\alpha 2$ siRNA (m): sc-35742, karyopherin $\alpha 2$ shRNA Plasmid (h): sc-35741-SH, karyopherin $\alpha 2$ shRNA Plasmid (m): sc-35742-SH, karyopherin $\alpha 2$ shRNA (h) Lentiviral Particles: sc-35741-V and karyopherin $\alpha 2$ shRNA (m) Lentiviral Particles: sc-35742-V.

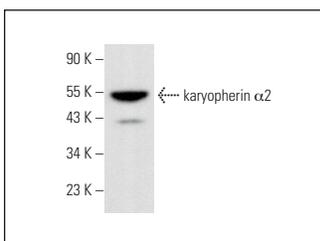
Molecular Weight of karyopherin $\alpha 2$: 52 kDa.

Positive Controls: F9 cell lysate: sc-2245.

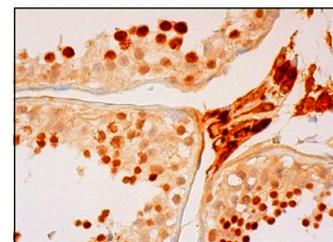
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



karyopherin $\alpha 2$ (8G5): sc-136204. Western blot analysis of karyopherin $\alpha 2$ expression in F9 whole cell lysate.



karyopherin $\alpha 2$ (8G5): sc-136204. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells.

SELECT PRODUCT CITATIONS

- Zhou, W., et al. 2013. Characterization of nuclear localization signal in the N-terminus of integrin-linked kinase-associated phosphatase (ILKAP) and its essential role in the down-regulation of RSK2 protein signaling. *J. Biol. Chem.* 288: 6259-6271.

RESEARCH USE

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