

karyopherin $\beta 3$ (B-7): sc-55527

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.

CHROMOSOMAL LOCATION

Genetic locus: IPO5 (human) mapping to 13q32.2; lpo5 (mouse) mapping to 14 E5.

SOURCE

karyopherin $\beta 3$ (B-7) is a mouse monoclonal antibody raised against amino acids 1-300 of karyopherin $\beta 3$ 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 $\beta 3$ (B-7) is available conjugated to agarose (sc-55527 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55527 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55527 PE), fluorescein (sc-55527 FITC), Alexa Fluor® 488 (sc-55527 AF488), Alexa Fluor® 546 (sc-55527 AF546), Alexa Fluor® 594 (sc-55527 AF594) or Alexa Fluor® 647 (sc-55527 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55527 AF680) or Alexa Fluor® 790 (sc-55527 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

karyopherin $\beta 3$ (B-7) is recommended for detection of karyopherin $\beta 3$ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

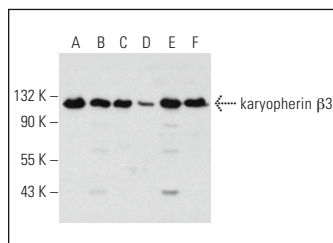
Suitable for use as control antibody for karyopherin $\beta 3$ siRNA (h): sc-35740, karyopherin $\beta 3$ siRNA (m): sc-35739, karyopherin $\beta 3$ shRNA Plasmid (h): sc-35740-SH, karyopherin $\beta 3$ shRNA Plasmid (m): sc-35739-SH, karyopherin $\beta 3$ shRNA (h) Lentiviral Particles: sc-35740-V and karyopherin $\beta 3$ shRNA (m) Lentiviral Particles: sc-35739-V.

Molecular Weight of karyopherin $\beta 3$: 116 kDa.

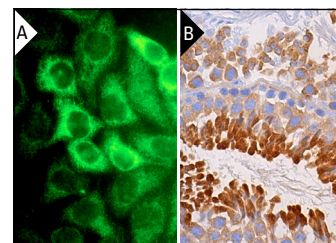
RECOMMENDED SUPPORT REAGENTS

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 $\beta 3$ (B-7): sc-55527. Western blot analysis of karyopherin $\beta 3$ expression in NTERA-2 cl.D1 (A), NCI-H292 (B), F9 (C), C3H/10T1/2 (D), C6 (E) and NRK (F) whole cell lysates.



karyopherin $\beta 3$ (B-7): sc-55527. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis tissue showing nuclear or cytoplasmic staining of cells in seminiferous ducts (B).

SELECT PRODUCT CITATIONS

- Sutherland, J.M., et al. 2015. RNA binding protein Musashi-1 directly targets Msi2 and Erh during early testis germ cell development and interacts with IPO5 upon translocation to the nucleus. *FASEB J.* 29: 2759-2768.
- Zhang, W., et al. 2019. IPO5 promotes the proliferation and tumorigenicity of colorectal cancer cells by mediating RASAL2 nuclear transportation. *J. Exp. Clin. Cancer Res.* 38: 296.
- Spits, M., et al. 2019. Homeostasis of soluble proteins and the proteasome post nuclear envelope reformation in mitosis. *J. Cell Sci.* 132: jcs225524.
- Johnson, K.L., et al. 2021. Revealing protein-protein interactions at the transcriptome scale by sequencing. *Mol Cell* 81: 3877.
- Johnson, K.L., et al. 2021. Revealing protein-protein interactions at the transcriptome scale by sequencing. *Mol. Cell* 81: 4091-4103.e9.

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.