

# karyopherin $\beta$ 3 (H-4): sc-17802

## 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 (EBNA-1). 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 (H-4) is a mouse monoclonal antibody raised against amino acids 1-300 of karyopherin  $\beta$ 3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

karyopherin  $\beta$ 3 (H-4) is recommended for detection of karyopherin  $\beta$ 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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  $\beta$ 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.

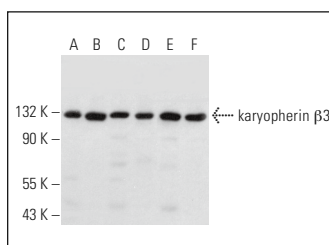
Molecular Weight of karyopherin  $\beta$ 3: 116 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NTERA-2 cl.D1 whole cell lysate: sc-364181 or NCI-H292 whole cell lysate: sc-364179.

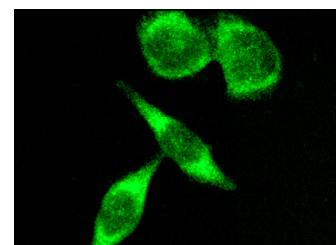
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



karyopherin  $\beta$ 3 (H-4): sc-17802. Western blot analysis of karyopherin  $\beta$ 3 expression in HeLa (A), NTERA-2 cl.D1 (B), NCI-H292 (C), F9 (D), C6 (E) and NRK (F) whole cell lysates.



karyopherin  $\beta$ 3 (H-4): sc-17802. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

- Marín, M.P., et al. 2008. Chronic ethanol exposure induces alterations in the nucleocytoplasmic transport in growing astrocytes. *J. Neurochem.* 106: 1914-1928.
- Chao, H.W., et al. 2012. NMDAR signaling facilitates the IPO5-mediated nuclear import of CPEB3. *Nucleic Acids Res.* 40: 8484-8498.
- Dzajak, R., et al. 2012. Specific nuclear localizing sequence directs two myosin isoforms to the cell nucleus in calmodulin-sensitive manner. *PLoS ONE* 7: e30529.
- Baas, R., et al. 2016. Quantitative proteomics of the SMAD (suppressor of mothers against decapentaplegic) transcription factor family identifies importin 5 as a bone morphogenic protein receptor SMAD-specific importin. *J. Biol. Chem.* 291: 24121-24132.
- Capulli, M., et al. 2019. Notch2 pathway mediates breast cancer cellular dormancy and mobilisation in bone and contributes to haematopoietic stem cell mimicry. *Br. J. Cancer* 121: 157-171.
- Fernandez, J., et al. 2019. Transportin-1 binds to the HIV-1 capsid via a nuclear localization signal and triggers uncoating. *Nat. Microbiol.* 4: 1840-1850.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.