

karyopherin $\alpha 5$ (H-4): sc-515870

BACKGROUND

Protein transport across the nucleus is a selective, multi-step process involving several cytoplasmic factors that mediate protein passage through the nuclear pore complex (NPC). Cytoplasmic proteins that contain nuclear localization signals (NLSs) must be recognized as import substrates, dock at the nuclear pore complex and translocate across the nuclear envelope in an ATP-dependent fashion. Karyopherin $\alpha 5$, also known as SRP6 or IPOA6, is a 536 amino acid protein that contains ten ARM repeats and one IBB domain and belongs to the importin α family. Expressed specifically in the testis, karyopherin $\alpha 5$ binds to proteins containing an NLS motif and directs them to the NPC for transport into the nucleus. Specifically, karyopherin $\alpha 5$ is thought to bind nuclear-targeted proteins through its IBB domain which acts as an intrasteric autoregulatory sequence that interacts with the target NLS domain. Due to its ability to direct proteins to the NPC for import, karyopherin $\alpha 5$ may be involved in the nuclear localization of HIV-1 and may, thus, be involved in the pathogenesis of the disease.

REFERENCES

1. von Schwedler, U., et al. 1994. The nuclear localization signal of the matrix protein of human immunodeficiency virus type 1 allows the establishment of infection in macrophages and quiescent T lymphocytes. *Proc. Natl. Acad. Sci. USA* 91: 6992-6996.
2. Köhler, M., et al. 1997. Cloning of two novel human importin- α subunits and analysis of the expression pattern of the importin- α protein family. *FEBS Lett.* 417: 104-108.
3. Bukrinsky, M.I. and Haffar, O.K. 1999. HIV-1 nuclear import: in search of a leader. *Front. Biosci.* 4: D772-D781.
4. Haffar, O.K., et al. 2000. Two nuclear localization signals in the HIV-1 matrix protein regulate nuclear import of the HIV-1 pre-integration complex. *J. Mol. Biol.* 299: 359-368.

CHROMOSOMAL LOCATION

Genetic locus: KPNA5 (human) mapping to 6q22.1.

SOURCE

karyopherin $\alpha 5$ (H-4) is a mouse monoclonal antibody raised against amino acids 51-100 mapping near the N-terminus of karyopherin $\alpha 5$ of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

karyopherin $\alpha 5$ (H-4) is available conjugated to agarose (sc-515870 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515870 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515870 PE), fluorescein (sc-515870 FITC), Alexa Fluor[®] 488 (sc-515870 AF488), Alexa Fluor[®] 546 (sc-515870 AF546), Alexa Fluor[®] 594 (sc-515870 AF594) or Alexa Fluor[®] 647 (sc-515870 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515870 AF680) or Alexa Fluor[®] 790 (sc-515870 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

karyopherin $\alpha 5$ (H-4) is recommended for detection of karyopherin $\alpha 5$ of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for karyopherin $\alpha 5$ siRNA (h): sc-62523, karyopherin $\alpha 5$ shRNA Plasmid (h): sc-62523-SH and karyopherin $\alpha 5$ shRNA (h) Lentiviral Particles: sc-62523-V.

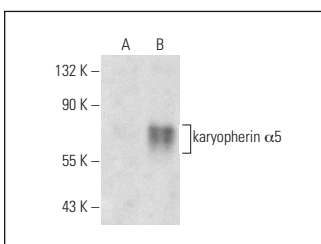
Molecular Weight of karyopherin $\alpha 5$: 60 kDa.

Positive Controls: human KPNA5 transfected HEK293T whole cell lysate.

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.

DATA



karyopherin $\alpha 5$ (H-4): sc-515870. Western blot analysis of karyopherin $\alpha 5$ expression in non-transfected (A) and human KPNA5 transfected (B) HEK293T whole cell lysates.

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.