

# Importin-7 (D-17): sc-55231

## BACKGROUND

Importin-7 (ran-binding protein 7, RanBP7) is a 1,038 amino acid protein encoded by the human gene IPO7. Importin-7 belongs to the Importin  $\beta$  family and contains one importin N-terminal domain. Importin-7 functions in nuclear protein import, either by acting as an autonomous nuclear transport receptor or as an adapter-like protein in association with the Importin  $\beta$  subunit KPNB1. Acting autonomously, Importin-7 is thought to serve itself as receptor for nuclear localization signals (NLS) and to promote translocation of import substrates through the nuclear pore complex (NPC) by an energy requiring, Ran-dependent mechanism. At the nucleoplasmic side of the NPC, Ran binds to Importin-7, the Importin-7/substrate complex dissociates and Importin-7 is re-exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran. Importin-7 is a nuclear protein that is expressed in most tissues.

## REFERENCES

- Jäkel, S., Albig, W., Kutay, U., Bischoff, F.R., Schwamborn, K., Doenecke, D. and Görlich, D. 1999. The Importin  $\beta$ /Importin-7 heterodimer is a functional nuclear import receptor for Histone H1. *EMBO J.* 18: 2411-2423.
- Baker, S.E., Lorenzen, J.A., Miller, S.W., Bunch, T.A., Jannuzi, A.L., Ginsberg, M.H., Perkins, L.A. and Brower, D.L. 2002. Genetic interaction between integrins and moleskin, a gene encoding a *Drosophila* homolog of Importin-7. *Genetics* 162: 285-296.
- Fassati, A., Görlich, D., Harrison, I., Zaytseva, L. and Mingot, J.M. 2003. Nuclear import of HIV-1 intracellular reverse transcription complexes is mediated by Importin-7. *EMBO J.* 22: 3675-3685.
- Freedman, N.D. and Yamamoto, K.R. 2004. Importin-7 and Importin  $\alpha$ /Importin  $\beta$  are nuclear import receptors for the glucocorticoid receptor. *Mol. Biol. Cell* 15: 2276-2286.
- Zielske, S.P. and Stevenson, M. 2005. Importin-7 may be dispensable for human immunodeficiency virus type 1 and simian immunodeficiency virus infection of primary macrophages. *J. Virol.* 79: 11541-11546.
- Vrailas, A.D., Marena, D.R., Cook, S.E., Powers, M.A., Lorenzen, J.A., Perkins, L.A. and Moses, K. 2006. Smoothed and thickveins regulate moleskin/Importin-7-mediated MAP kinase signaling in the developing *Drosophila* eye. *Development* 133: 1485-1494.
- Arnold, M., Nath, A., Hauber, J. and Kehlenbach, R.H. 2006. Multiple importins function as nuclear transport receptors for the Rev protein of human immunodeficiency virus type 1. *J. Biol. Chem.* 281: 20883-20890.

## CHROMOSOMAL LOCATION

Genetic locus: IPO7 (human) mapping to 11p15.4; Ipo7 (mouse) mapping to 7 F1.

## SOURCE

Importin-7 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Importin-7 of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55231 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Importin-7 (D-17) is recommended for detection of Importin-7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Importin-7 (D-17) is also recommended for detection of Importin-7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Importin-7 siRNA (h): sc-62501, Importin-7 siRNA (m): sc-62502, Importin-7 shRNA Plasmid (h): sc-62501-SH, Importin-7 shRNA Plasmid (m): sc-62502-SH, Importin-7 shRNA (h) Lentiviral Particles: sc-62501-V and Importin-7 shRNA (m) Lentiviral Particles: sc-62502-V.

Molecular Weight of Importin-7: 120 kDa.

Positive Controls: IMR-32 nuclear extract: sc-2148 or SK-N-MC nuclear extract: sc-2154.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## PROTOCOLS

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



Try **Importin-7 (E-2): sc-365231** or **Importin-7 (H-12): sc-271701**, our highly recommended monoclonal alternatives to Importin-7 (D-17).