

nucleoporin p62 (D-8): sc-514790

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 α and karyopherin β proteins. The karyopherin holoenzyme is a heterodimer of α and β subunits. Karyopherin α functions in the recognition and targeting of substrates destined for nuclear import, while karyopherin β serves as an adaptor, tethering the karyopherin α substrate complex to docking proteins (termed nucleoporins) on the nuclear envelope. p62 glycoprotein is one such nucleoporin, and is not only involved in the nuclear import of proteins, but also the export of nascent mRNA strands. An additional protein, NTF2 (nuclear transport factor 2), interacts with nucleoporin p62 as a homodimer and may be an obligate component of functional p62.

REFERENCES

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- 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.
- Buss, F., et al. 1995. Macromolecular interactions in the nucleoporin p62 complex of rat nuclear pores: binding of nucleoporin p54 to the rod domain of p62. *J. Cell Biol.* 128: 251-261.
- Paschal, B.M., et al. 1995. Identification of NTF2, a cytosolic factor for nuclear import that interacts with nuclear pore complex protein p62. *J. Cell Biol.* 129: 925-937.
- Dargemont, C., et al. 1995. Direct interaction of nucleoporin p62 with mRNA during its export from the nucleus. *J. Cell Sci.* 108: 257-263.
- 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: NUP62 (human) mapping to 19q13.33; Nup62 (mouse) mapping to 7 B4.

SOURCE

nucleoporin p62 (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 483-505 at the C-terminus of nucleoporin p62 of rat 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.

Blocking peptide available for competition studies, sc-514790 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

nucleoporin p62 (D-8) is recommended for detection of nucleoporin p62 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for nucleoporin p62 siRNA (h): sc-36107, nucleoporin p62 siRNA (m): sc-36108, nucleoporin p62 shRNA Plasmid (h): sc-36107-SH, nucleoporin p62 shRNA Plasmid (m): sc-36108-SH, nucleoporin p62 shRNA (h) Lentiviral Particles: sc-36107-V and nucleoporin p62 shRNA (m) Lentiviral Particles: sc-36108-V.

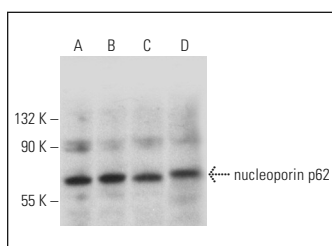
Molecular Weight of nucleoporin p62: 62 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HEK293T whole cell lysate: sc-45137 or rat brain extract: sc-2392.

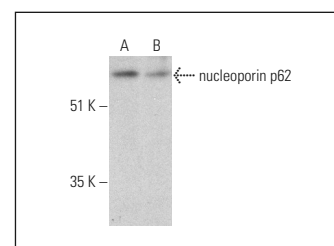
RECOMMENDED SUPPORT REAGENTS

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



nucleoporin p62 (D-8): sc-514790. Western blot analysis of nucleoporin p62 expression in Jurkat (A), HEK293T (B), PC-3 (C) and C6 (D) whole cell lysates.



nucleoporin p62 (D-8): sc-514790. Western blot analysis of nucleoporin p62 expression in rat brain (A) and mouse brain (B) tissue extracts.

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.