SANTA CRUZ BIOTECHNOLOGY, INC.

TPR (H-12): sc-271317

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The vertebrate nuclear pore complex (NPC) is a macromolecular assembly of protein subcomplexes forming a structure of eightfold radial symmetry. The NPC core consists of globular subunits sandwiched between two coaxial RING-like structures of which the ring facing the nuclear interior is capped by a fibrous structure called the nuclear basket. The assembly of the NPC is a stepwise process in which Trp-containing peripheral structures assemble after other components, including p62. TPR localizes to intranuclear filaments of the NPC, and is a component of the cytoplasmic fibrils of the NPC implicated in nuclear protein import. Experimental data suggest that TPR is tethered to intranuclear filaments of the NPC by its coiled coil domain leaving the acidic COOH terminus free to interact with soluble transport factors and mediate export of macromolecules from the nucleus.

REFERENCES

1. Byrd, D.A., et al. 1994. TPR, a large coiled coil protein whose amino terminus is involved in activation of oncogenic kinases, is localized to the cytoplasmic surface of the nuclear pore complex. J. Cell Biol. 127: 1515-1526.
2. Bangs, P., et al. 1998. Functional analysis of TPR: identification of nuclear pore complex association and nuclear localization domains and a role in mRNA export. J. Cell Biol. 143: 1801-1812.
3. Cordes, V.C., et al. 1998. Molecular segments of protein TPR that confer nuclear targeting and association with the nuclear pore complex. Exp. Cell Res. 245: 43-56.
4. Krull, S., et al. 2004. Nucleoporins as components of the nuclear pore complex core structure and TPR as the architectural element of the nuclear basket. Mol. Biol. Cell 15: 4261-4277.
5. Beausoleil, S.A., et al. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. Proc. Natl. Acad. Sci. USA 101: 12130-12135.

CHROMOSOMAL LOCATION

Genetic locus: TPR (human) mapping to 1q31.1; Tpr (mouse) mapping to 1 G1.

SOURCE

TPR (H-12) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of TPR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

TPR (H-12) is recommended for detection of TPR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 TPR siRNA (h): sc-45343, TPR siRNA (m): sc-45344, TPR shRNA Plasmid (h): sc-45343-SH, TPR shRNA Plasmid (m): sc-45344-SH, TPR shRNA (h) Lentiviral Particles: sc-45343-V and TPR shRNA (m) Lentiviral Particles: sc-45344-V.

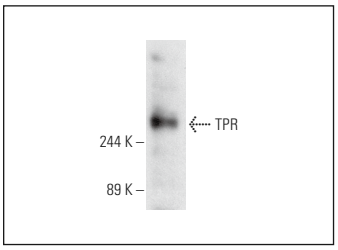
Molecular Weight of TPR: 265-270 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or SK-N-MC cell lysate: sc-2237.

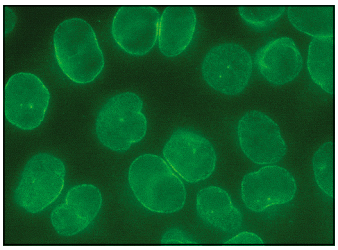
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



TPR (H-12): sc-271317. Western blot analysis of TPR expression in 293T whole cell lysate.



TPR (H-12): sc-271317. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization.

SELECT PRODUCT CITATIONS

1. Ben-Yishay, R., et al. 2019. Imaging within single NPCs reveals NXF1's role in mRNA export on the cytoplasmic side of the pore. J. Cell Biol. 218: 2962-2981.

RESEARCH USE

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