SANTA CRUZ BIOTECHNOLOGY, INC.

TPR (3B9): sc-101294

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.

CHROMOSOMAL LOCATION

Genetic locus: TPR (human) mapping to 1q31.1.

SOURCE

TPR (3B9) is a mouse monoclonal antibody raised against recombinant TPR of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TPR (3B9) is recommended for detection of translocated promoter region of human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-45343-SH and TPR shRNA (h) Lentiviral Particles: sc-45343-V.

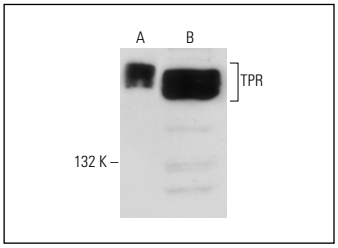
Molecular Weight of TPR: 265-270 kDa.

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

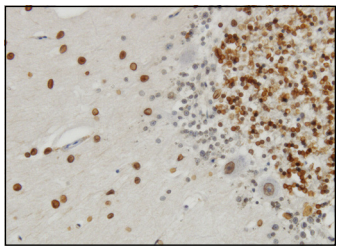
STORAGE

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

DATA



TPR (3B9): sc-101294. Western blot analysis of TPR expression in 293T (**A**) and SK-N-MC (**B**) whole cell lysates.



TPR (3B9): sc-101294. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human cerebellum tissue showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. David-Watine, B. 2011. Silencing nuclear pore protein TPR elicits a senescent-like phenotype in cancer cells. PLoS ONE 6: e22423.
2. Lelek, M., et al. 2015. Chromatin organization at the nuclear pore favours HIV replication. Nat. Commun. 6: 6483.
3. Mohamed, M.S., et al. 2017. High-speed atomic force microscopy reveals loss of nuclear pore resilience as a dying code in colorectal cancer cells. ACS Nano 11: 5567-5578.
4. Dewi, F.R.P., et al. 2018. Colorectal cancer cells require glycogen synthase kinase-3β for sustaining mitosis via translocated promoter region (TPR)-Dynein interaction. Oncotarget 9: 13337-13352.
5. Hazawa, M., et al. 2018. ROCK-dependent phosphorylation of NUP62 regulates p63 nuclear transport and squamous cell carcinoma proliferation. EMBO Rep. 19: 73-88.
6. Hartono., et al. 2019. Nucleoporin Nup58 localizes to centrosomes and mid-bodies during mitosis. Cell Div. 14: 7.
7. Kato, K., et al. 2021. Overexpression of SARS-CoV-2 protein ORF6 dislocates RAE1 and NUP98 from the nuclear pore complex. Biochem. Biophys. Res. Commun. 536: 59-66.
8. Dewi, F.R.P., et al. 2021. Nucleoporin TPR (translocated promoter region, nuclear basket protein) upregulation alters MTOR-HSF1 trails and suppresses autophagy induction in ependymoma. Autophagy 17: 1001-1012.
9. Pardo-Lorente, N., et al. 2024. Nuclear localization of MTHFD2 is required for correct mitosis progression. Nat. Commun. 15: 9529.

RESEARCH USE

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