SANTA CRUZ BIOTECHNOLOGY, INC.

# RP2 (37.28): sc-81892

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

RP2 (retinitis pigmentosa 2), also known as TBCCD2, is a 350 amino acid protein that localizes to the cytoplasmic side of the cell membrane and belongs to the TBCC family. Expressed ubiquitously, RP2 functions to stimulate the GTPase activity of tubulin and is thought to act as a guanine nucleotide dissociation inhibitor for ARL3 (ADP-ribosylation factor-like 3), preventing the GTP-bound form of ARL3 from dissociating. Via its ability to stimulate tubulin activity, RP2 plays an important role in retinal development. RP2 contains one C-CAP/cofactor C-like domain and can be myristoylated or palmitoylated, both of which are thought to be required for proper membrane targeting. Defects in the gene encoding RP2 are the cause of retinitis pigmentosa type 2 (RP2), a disorder characterized by the degeneration of photoreceptor cells, resulting in night vision blindness and an eventual loss of both peripheral and central vision.

## REFERENCES


1. Thiselton, D.L., et al. 1996. Mapping the RP2 locus for X-linked retinitis pigmentosa on proximal Xp: a genetically defined 5 cM critical region and exclusion of candidate genes by physical mapping. Genome Res. 6: 1093-1102.
2. Schwahn, U., et al. 1998. Positional cloning of the gene for X-linked retinitis pigmentosa 2. Nat. Genet. 19: 327-332.
3. Rosenberg, T., et al. 1999. Genotype-phenotype correlation in X-linked retinitis pigmentosa 2 (RP2). Ophthalmic Genet. 20: 161-172.
4. Chapple, J.P., et al. 2000. Mutations in the N-terminus of the X-linked retinitis pigmentosa protein RP2 interfere with the normal targeting of the protein to the plasma membrane. Hum. Mol. Genet. 9: 1919-1926.
5. Thiselton, D.L., et al. 2000. Novel frameshift mutations in the RP2 gene and polymorphic variants. Hum. Mutat. 15: 580.
6. Breuer, D.K., et al. 2002. A comprehensive mutation analysis of RP2 and RPGR in a North American cohort of families with X-linked retinitis pigmentosa. Am. J. Hum. Genet. 70: 1545-1554.
7. Bartolini, F., et al. 2002. Functional overlap between retinitis pigmentosa 2 protein and the tubulin-specific chaperone cofactor C. J. Biol. Chem. 277: 14629-14634.
8. Jin, Z.B., et al. 2006. Mutational analysis of RPGR and RP2 genes in Japanese patients with retinitis pigmentosa: identification of four mutations. Mol. Vis. 12: 1167-1174.
9. Kühnel, K., et al. 2006. Crystal structure of the human retinitis pigmentosa 2 protein and its interaction with ARL3. Structure 14: 367-378.


## 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.

## CHROMOSOMAL LOCATION

Genetic locus: RP2 (human) mapping to Xp11.3.

## SOURCE

RP2 (37.28) is a mouse monoclonal antibody raised against recombinant RP2 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

RP2 (37.28) is recommended for detection of RP2 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RP2 siRNA (h): sc-76428, RP2 shRNA Plasmid (h): sc-76428-SH and RP2 shRNA (h) Lentiviral Particles: sc-76428-V.

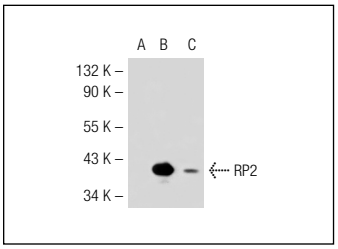
Molecular Weight of RP2: 40 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or RP2 (h): 293T Lysate: sc-115936.

## 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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA




RP2 (37.28): sc-81892. Western blot analysis of RP2 expression in non-transfected 293T: sc-117752 (**A**) and human RP2 transfected 293T: sc-115936 (**B**) whole cell lysates and HeLa nuclear extract (**C**).

## RESEARCH USE

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