

Rootletin (Q-15): sc-67828

BACKGROUND

Rootletin, also known as CROCC (ciliary rootlet coiled-coil protein), is a 2,017 amino acid protein that forms centriole-associated fibrous structures and is an essential component of the ciliary rootlet. Localized to basal bodies and centrosomes in ciliated and nonciliated cells, respectively, Rootletin associates with the proximal ends of basal bodies and, in photoreceptors, functions to form elongated polymers between them. Rootletin is required for centrosome cohesion and, through interaction with C-Nap1 (a centrosomal protein present at the ends of the centrioles), can regulate the linkage of centrioles to basal bodies. Rootletin exists as a homopolymer whose association with centrosomes can be regulated via phosphorylation by Nek2 (NIMA-related kinase 2). Two isoforms exist due to alternative splicing events.

REFERENCES

1. Yang, J., Liu, X., Yue, G., Adamian, M., Bulgakov, O. and Li, T. 2002. Rootletin, a novel coiled-coil protein, is a structural component of the ciliary rootlet. *J. Cell Biol.* 159: 431-440.
2. Yang, J., Gao, J., Adamian, M., Wen, X.H., Pawlyk, B., Zhang, L., Sanderson, M.J., Zuo, J., Makino, C.L. and Li, T. 2005. The ciliary rootlet maintains long-term stability of sensory cilia. *Mol. Cell Biol.* 25: 4129-4137.
3. Bahe, S., Stierhof, Y.D., Wilkinson, C.J., Leiss, F. and Nigg, E.A. 2005. Rootletin forms centriole-associated filaments and functions in centrosome cohesion. *J. Cell Biol.* 171: 27-33.
4. Yang, J. and Li, T. 2006. Focus on molecules: Rootletin. *Exp. Eye Res.* 83: 1-2.
5. Yang, J., Adamian, M. and Li, T. 2006. Rootletin interacts with C-Nap1 and may function as a physical linker between the pair of centrioles/basal bodies in cells. *Mol. Biol. Cell* 17: 1033-1040.
6. Mi, J., Guo, C., Brautigan, D.L. and Larner, J.M. 2007. Protein phosphatase-1 α regulates centrosome splitting through Nek2. *Cancer Res.* 67: 1082-1089.
7. Graser, S., Stierhof, Y.D. and Nigg, E.A. 2007. Cep68 and Cep215 (Cdk5 RAP2) are required for centrosome cohesion. *J. Cell Sci.* 120: 4321-4331.
8. Bahmanyar, S., Kaplan, D.D., Deluca, J.G., O'Toole, E.T., Winey, M., Salmon, E.D., Casey, P.J., Nelson, W.J. and Barth, A.I. 2008. β -Catenin is a Nek2 substrate involved in centrosome separation. *Genes Dev.* 22: 91-105.

CHROMOSOMAL LOCATION

Genetic locus: CROCC (human) mapping to 1p36.13.

SOURCE

Rootletin (Q-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rootletin of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-67828 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rootletin (Q-15) is recommended for detection of Rootletin of 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).

Suitable for use as control antibody for Rootletin siRNA (h): sc-62960, Rootletin shRNA Plasmid (h): sc-62960-SH and Rootletin shRNA (h) Lenti-viral Particles: sc-62960-V.

Molecular Weight of Rootletin: 228 kDa.

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.

RESEARCH USE

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

PROTOCOLS

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



Try **Rootletin (C-2): sc-374056** or **Rootletin (E-5): sc-390720**, our highly recommended monoclonal alternatives to Rootletin (Q-15).