SANTA CRUZ BIOTECHNOLOGY, INC.

Rootletin (S-13): sc-67829

BACKGROUND

Rootletin, also known as CROCC (ciliary rootlet coiled-coil protein), is a 2017 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., et al. 2002. Rootletin, a novel coiled-coil protein, is a structural component of the ciliary rootlet. J. Cell Biol. 159: 431-440.
2. Yang, J., et al. 2005. The ciliary rootlet maintains long-term stability of sensory cilia. Mol. Cell. Biol. 25: 4129-4137.
3. Bahe, S., et al. 2005. Rootletin forms centriole-associated filaments and functions in centrosome cohesion. J. Cell Biol. 171: 27-33.
4. Yang, J., et al. 2006. Focus on molecules: rootletin. Exp. Eye Res. 83: 1-2.
5. Yang, J., et al. 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., et al. 2007. Protein phosphatase-1α regulates centrosome splitting through Nek2. Cancer Res. 67: 1082-1089.
7. Graser, S., et al. 2007. Cep68 and Cep215 (Cdk5rap2) are required for centrosome cohesion. J. Cell. Sci. 120: 4321-4331.
8. Bahmanyar, S., et al. 2008. β-Catenin is a Nek2 substrate involved in centrosome separation. Genes Dev. 22: 91-105.

CHROMOSOMAL LOCATION

Genetic locus: Crocc (mouse) mapping to 4 D3.

SOURCE

Rootletin (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rootletin of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-67829 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Rootletin (S-13) is recommended for detection of Rootletin of mouse and rat 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 (m): sc-62961, Rootletin shRNA Plasmid (m): sc-62961-SH and Rootletin shRNA (m) Lentiviral Particles: sc-62961-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.

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.