SANTA CRUZ BIOTECHNOLOGY, INC.

CRB3 (S-20): sc-27906

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The transmembrane protein Crumbs plays a crucial role in epithelial cell polarity and photoreceptor development in *Drosophila melanogaster* embryos, but the first identified human homologue, CRB1, is only expressed in retina and some parts of the brain, leaving room for another homologue to function in epithelial tissues. Leber congenital amaurosis or progressive retinitis pigmentosa are caused by loss of CRB1 function. A second homologue, CRB3, fills the gap, showing expression in epithelial tissues as well as skeletal muscles. CRB3 shares a cytoplasmic domain with other Crumbs proteins, but contains only a very short extracellular domain, through which it interacts with Par6, a regulator of epithelial polarity and tight junction formation. Thus, this specialized isoform provides a connection between apical membrane formation and tight junction regulation.

REFERENCES

1. Roh, M.H., Makarova, O., Liu, C.J., Shin, K., Lee, S., Laurinec, S., Goyal, M., Wiggins, R., and Margolis, B. 2002. The Maguk protein, Pals1, functions as an adapter, linking mammalian homologues of Crumbs and Discs Lost. J. Cell Biol. 157: 161-172.
2. Makarova, O., Roh, M.H., Liu, C.J., Laurinec, S., and Margolis, B. 2003. Mammalian Crumbs3 is a small transmembrane protein linked to protein associated with Lin-7 (Pals1). Gene 302: 21-29.
3. van de Pavert, S.A., Kantardzhieva, A., Malysheva, A., Meuleman, J., Versteeg, I., Levelt, C., Klooster, J., Geiger, S., Seeliger, M.W., Rashbass, P., Le Bivic, A., and Wijnholds, J. 2004. Crumbs homologue 1 is required for maintenance of photoreceptor cell polarization and adhesion during light exposure. J. Cell Sci. 117: 4169-4177.
4. Lemmers C, Michel, D., Lane-Guermonprez, L., Delgrossi, M.H., Medina, E., Arsanto, J.P., and Le Bivic, A. 2004. CRB3 binds directly to Par6 and regulates the morphogenesis of the tight junctions in mammalian epithelial cells. Mol. Biol. Cell 15: 1324-1333.

CHROMOSOMAL LOCATION

Genetic locus: Crb3 (mouse) mapping to 17 D.

SOURCE

CRB3 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CRB3 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-27906 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

CRB3 (S-20) is recommended for detection of CRB3 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CRB3 siRNA (m): sc-142561, CRB3 shRNA Plasmid (m): sc-142561-SH and CRB3 shRNA (m) Lentiviral Particles: sc-142561-V.

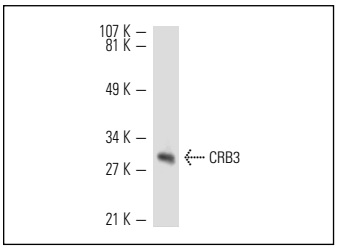
Molecular Weight of CRB3: 20-28 kDa.

Positive Controls: mouse kidney extract: sc-2255.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CRB3 (S-20): sc-27906. Western blot analysis of CRB3 expression in mouse kidney tissue extract.

SELECT PRODUCT CITATIONS

1. Wong, E.W., Mruk, D.D., Lee, W.M. and Cheng, C.Y. 2008. Par3/Par6 polarity complex coordinates apical ectoplasmic specialization and blood-testis barrier restructuring during spermatogenesis. Proc. Natl. Acad. Sci. USA 105: 9657-9662.
2. Herranz-Martín, S., et al. 2012. Immunocytochemical evidence of the localization of the crumbs homologue 3 protein (CRB3) in the developing and mature mouse retina. PLoS ONE 7: e50511.

RESEARCH USE

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