SANTA CRUZ BIOTECHNOLOGY, INC.

CRB3 siRNA (m): sc-142561

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 PAR-6, 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., et al. 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., et al. 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., et al. 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., et al. 2004. CRB3 binds directly to PAR-6 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.

PRODUCT

CRB3 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CRB3 shRNA Plasmid (m): sc-142561-SH and CRB3 shRNA (m) Lentiviral Particles: sc-142561-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

PROTOCOLS

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

APPLICATIONS

CRB3 siRNA (m) is recommended for the inhibition of CRB3 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CRB3 gene expression knockdown using RT-PCR Primer: CRB3 (m)-PR: sc-142561-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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