SANTA CRUZ BIOTECHNOLOGY, INC.

PCDH15 (H-300): sc-98647

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Protocadherins are a large family of cadherin-like cell adhesion proteins that are involved in the establishment and maintenance of neuronal connections in the brain. There are three protocadherin gene clusters, designated α, β and γ, all of which contain multiple tandemly arranged genes. PCDH15 (protocadherin 15), also known as USH1F or DFNB23, is a 1,955 amino acid single-pass type I membrane protein that contains 11 cadherin domains and exists as multiple alternatively spliced isoforms. Expressed in testis, brain, lung, kidney and spleen, PCDH15 functions as a calcium-dependent cell-adhesion protein that is crucial for the maintenance of normal cochlear and retinal function. Defects in the gene encoding PCDH15 are associated with Usher syndrome type 1F (USH1F), Usher syndrome type 1D/F (USH1DF) and non-syndromic sensorineural deafness autosomal recessive type 23 (DFNB23), all of which are associated with deafness. Multiple isoforms of PCDH15 exist due to alternative splicing events.

REFERENCES

1. Ahmed, Z.M., et al. 2001. Mutations of the protocadherin gene PCDH15 cause Usher syndrome type 1F. Am. J. Hum. Genet. 69: 25-34.
2. Alagramam, K.N., et al. 2001. Mutations in the novel protocadherin PCDH15 cause Usher syndrome type 1F. Hum. Mol. Genet. 10: 1709-1718.
3. Ahmed, Z.M., et al. 2003. PCDH15 is expressed in the neurosensory epithelium of the eye and ear and mutant alleles are responsible for both USH1F and DFNB23. Hum. Mol. Genet. 12: 3215-3223.
4. Zheng, Q.Y., et al. 2005. Digenic inheritance of deafness caused by mutations in genes encoding cadherin 23 and protocadherin 15 in mice and humans. Hum. Mol. Genet. 14: 103-111.
5. Zheng, Q.Y., et al. 2006. A new spontaneous mutation in the mouse protocadherin 15 gene. Hear. Res. 219: 110-120.
6. Alagramam, K.N., et al. 2007. Promoter, alternative splice forms, and genomic structure of protocadherin 15. Genomics 90: 482-492.
7. Le Guédard, S., et al. 2007. Large genomic rearrangements within the PCDH15 gene are a significant cause of USH1F syndrome. Mol. Vis. 13: 102-107.
8. Ahmed, Z.M., et al. 2008. Gene structure and mutant alleles of PCDH15: nonsyndromic deafness DFNB23 and type 1 Usher syndrome. Hum. Genet. 124: 215-223.
9. Jacobson, S.G., et al. 2008. Usher syndromes due to MYO7A, PCDH15, USH2A or GPR98 mutations share retinal disease mechanism. Hum. Mol. Genet. 17: 2405-2415.

CHROMOSOMAL LOCATION

Genetic locus: PCDH15 (human) mapping to 10q21.1; Pcdh15 (mouse) mapping to 10 B5.3.

SOURCE

PCDH15 (H-300) is a rabbit polyclonal antibody raised against amino acids 781-1079 mapping within an internal region of PCDH15 of human origin.

PRODUCT

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

APPLICATIONS

PCDH15 (H-300) is recommended for detection of PCDH15 of mouse, rat and 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)], 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).

PCDH15 (H-300) is also recommended for detection of PCDH15 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PCDH15 siRNA (h): sc-90494, Pcdh15 siRNA (m): sc-152056, PCDH15 shRNA Plasmid (h): sc-90494-SH, Pcdh15 shRNA Plasmid (m): sc-152056-SH, PCDH15 shRNA (h) Lentiviral Particles: sc-90494-V and Pcdh15 shRNA (m) Lentiviral Particles: sc-152056-V.

Molecular Weight (predicted) of PCDH15 isoforms: 216/92/107 kDa.

Molecular Weight (observed) of PCDH15: 70 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.