SANTA CRUZ BIOTECHNOLOGY, INC.

cadherin-23 (G-11): sc-166005

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cadherin-23 represents the first in this family of calcium binding proteins of which mutations in the extracellular calcium binding domain contribute to an inherited disorder, Usher syndrome type 1D (USH1D). Patients with USH1D exhibit congenital sensorineural hearing loss, vestibular dysfunction and visual impairment due to early onset of retinitis pigmentosa (RP). In the inner ear, cadherin-23 interacts with myosin VIIIa and Harmonin to form a functional network duing hair cell differentiation and in the retina to assemble a supra-molecular complex contributing to the organization of the cytoskeletal matrices of the pre- and post-synaptic region. A number of cadherin-23 splice variants exist in association with various phenotypic expression, indicating that differential mutations result in variable presentation of the disease.

REFERENCES

1. Di Palma, F., et al. 2001. Genomic structure, alternative splice forms and normal and mutant alleles of cadherin-23 (Cdh23). Gene 281: 31-41.
2. Bolz, H., et al. 2001. Mutation of CDH23, encoding a new member of the cadherin gene family, causes Usher syndrome type 1D. Nat. Genet. 27: 108-112.
3. Boëda, B., et al. 2002. Myosin VIIa, Harmonin and cadherin-23, three Usher I gene products that cooperate to shape the sensory hair cell bundle. EMBO J. 21: 6689-6699.
4. Siemens, J., et al. 2002. The Usher syndrome proteins cadherin-23 and Harmonin form a complex by means of PDZ-domain interactions. Proc. Natl. Acad. Sci. USA 99: 14946-14951.
5. Noben-Trauth, K., et al. 2003. Association of cadherin-23 with polygenic inheritance and genetic modification of sensorineural hearing loss. Nat. Genet. 35: 21-23.
6. Reiners, J., et al. 2003. Differential distribution of harmonin isoforms and their possible role in Usher-1 protein complexes in mammalian photoreceptor cells. Invest. Ophthalmol. Vis. Sci. 44: 5006-5015.
7. de Brouwer, A.P., et al. 2003. Mutations in the calcium-binding motifs of CDH23 and the 35delG mutation inGJB2 cause hearing loss in one family. Hum. Genet. 112: 156-163.

CHROMOSOMAL LOCATION

Genetic locus: CDH23 (human) mapping to 10q22.1; Cdh23 (mouse) mapping to 10 B4.

SOURCE

cadherin-23 (G-11) is a mouse monoclonal antibody raised against amino acids 151-450 mapping within an extracellular domain of cadherin-23 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cadherin-23 (G-11) is recommended for detection of cadherin-23 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 cadherin-23 siRNA (h): sc-43009, cadherin-23 siRNA (m): sc-43010, cadherin-23 shRNA Plasmid (h): sc-43009-SH, cadherin-23 shRNA Plasmid (m): sc-43010-SH, cadherin-23 shRNA (h) Lentiviral Particles: sc-43009-V and cadherin-23 shRNA (m) Lentiviral Particles: sc-43010-V.

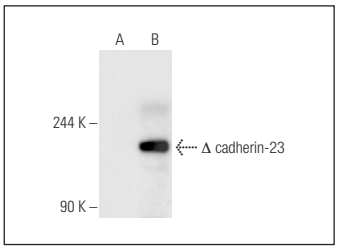
Molecular Weight of cadherin-23: 370 kDa.

Positive Controls: cadherin-23 (h2): 293T Lysate: sc-115145.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



cadherin-23 (G-11): sc-166005. Western blot analysis of cadherin-23 expression in non-transfected: sc-117752 (**A**) and truncated human cadherin-23 transfected: sc-115145 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Maddalena, A., et al. 2018. Triple vectors expand AAV transfer capacity in the retina. Mol. Ther. 26: 524-541.

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.