SANTA CRUZ BIOTECHNOLOGY, INC.

Whirlin (G-8): sc-365250

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Whirlin is a cytoplasmic PDZ domain-containing protein that plays a role in elongation and maintenance of stereocilia, mechanosensory organelles located in hair cells of the inner ear. Whirlin co-localizes with Actin filaments and is primarily detected in cochlear hair cells. It is connected to the dynamic Usher protein interactome and has a pleiotropic function in both the retina and the inner ear. Myosin XVa is a motor protein that accociates with the second and third PDZ domain of Whirlin through its C-terminal PDZ-ligand. Myosin XVa then delivers Whirlin to the tips of stereocilia, which are subsequently elongated. p55 also interacts with Whirlin, and mutations in DFNB31, the Whirlin gene, lead to an early ablation of p55 labeling of stereocilia, which may cause recessive hearing loss in rats and humans.

REFERENCES

1. Belyantseva, I.A., et al. 2003. Stereocilia: the long and the short of it. Trends Mol. Med. 9: 458-461.
2. Mburu, P., et al. 2003. Defects in Whirlin, a PDZ domain molecule involved in stereocilia elongation, cause deafness in the whirler mouse and families with DFNB31. Nat. Genet. 34: 421-428.
3. Belyantseva, I.A., et al. 2005. Myosin-XVa is required for tip localization of whirlin and differential elongation of hair-cell stereocilia. Nat. Cell Biol. 7: 148-156.

CHROMOSOMAL LOCATION

Genetic locus: DFNB31 (human) mapping to 9q32; Whrn (mouse) mapping to 4 C1.

SOURCE

Whirlin (G-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 723-751 within an internal region of Whirlin 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.

Whirlin (G-8) is available conjugated to agarose (sc-365250 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365250 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365250 PE), fluorescein (sc-365250 FITC), Alexa Fluor® 488 (sc-365250 AF488), Alexa Fluor® 546 (sc-365250 AF546), Alexa Fluor® 594 (sc-365250 AF594) or Alexa Fluor® 647 (sc-365250 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365250 AF680) or Alexa Fluor® 790 (sc-365250 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365250 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Whirlin (G-8) is recommended for detection of all isoforms of Whirlin 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

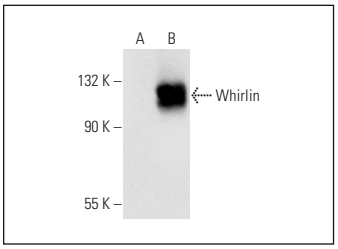
Whirlin (G-8) is also recommended for detection of all isoforms of Whirlin in additional species, including porcine.

Suitable for use as control antibody for Whirlin siRNA (h): sc-61800, Whirlin siRNA (m): sc-61801, Whirlin shRNA Plasmid (h): sc-61800-SH, Whirlin shRNA Plasmid (m): sc-61801-SH, Whirlin shRNA (h) Lentiviral Particles: sc-61800-V and Whirlin shRNA (m) Lentiviral Particles: sc-61801-V.

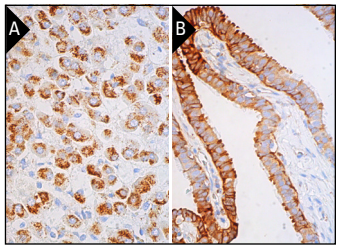
Molecular Weight of Whirlin: 97 kDa.

Positive Controls: Whirlin (h2): 293T Lysate: sc-112818 or mouse cerebellum extract: sc-2403.

DATA



Whirlin (G-8): sc-365250. Western blot analysis of Whirlin expression in non-transfected: sc-117752 (**A**) and human Whirlin transfected: sc-112818 (**B**) 293T whole cell lysates.



Whirlin (G-8): sc-365250. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (**A**) and immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic and membrane staining of glandular cells (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

1. Behlouli, A., et al. 2014. EPS8, encoding an actin-binding protein of cochlear hair cell stereocilia, is a new causal gene for autosomal recessive profound deafness. Orphanet J. Rare Dis. 9: 55.
2. Mauriac, S.A., et al. 2017. Defective Gpsm2/$G_{\alpha i 3}$ signalling disrupts stereocilia development and growth cone Actin dynamics in Chudley-McCullough syndrome. Nat. Commun. 8: 14907.

RESEARCH USE

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