

OTOP2 (T-13): sc-136785

BACKGROUND

Otopetrins are multi-transmembrane domain proteins that share conserved gene and protein structure and are possibly involved in the formation of otoconia and otoliths. Located in the utricle and saccule of the inner ear, otoconia are complex calcium carbonate biominerals that are required for the normal sensation of gravity and linear acceleration. Vertigo and loss of balance may be attributed to degeneration or displacement of otoconia. The otopetrin family consists of three proteins, OTOP1, OTOP2 and OTOP3. These proteins have 12 putative transmembrane domains that are clustered into three otopetrin domains (OD-I, II and III). OTOP1 was the first described member of the otopetrin family. Mutations of OTOP1 leads to absence of otoconia or otoliths, though inner ear development is normal. OTOP2 and OTOP3 share significant structural similarity with OTOP1 and may also play a role in the formation of mineralized structures.

REFERENCES

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2. Thalmann, R., et al. 2001. Development and maintenance of otoconia: biochemical considerations. *Ann. N.Y. Acad. Sci.* 942: 162-178.
3. Hurler, B., et al. 2003. Non-syndromic vestibular disorder with otoconial agenesis in tilted/mergulhador mice caused by mutations in otopetrin 1. *Hum. Mol. Genet.* 12: 777-789.
4. Hughes, I., et al. 2004. Otopetrin 1 is required for otolith formation in the zebrafish *Danio rerio*. *Dev. Biol.* 276: 391-402.
5. Söllner, C., et al. 2004. Mutated otopetrin 1 affects the genesis of otoliths and the localization of Starmaker in zebrafish. *Dev. Genes Evol.* 214: 582-590.
6. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 607806. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Hughes, I., et al. 2006. Mixing model systems: using zebrafish and mouse inner ear mutants and other organ systems to unravel the mystery of otoconial development. *Brain Res.* 1091: 58-74.
8. Hughes, I., et al. 2007. Otopetrin 1 activation by purinergic nucleotides regulates intracellular calcium. *Proc. Natl. Acad. Sci. USA* 104: 12023-12028.

CHROMOSOMAL LOCATION

Genetic locus: OTOP2 (human) mapping to 17q25.1.

SOURCE

OTOP2 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of OTOP2 of human origin.

STORAGE

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

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-136785 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OTOP2 (T-13) is recommended for detection of OTOP2 of 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); non cross-reactive with OTOP1 or OTOP3.

OTOP2 (T-13) is also recommended for detection of OTOP2 in additional species, including porcine.

Suitable for use as control antibody for OTOP2 siRNA (h): sc-93831, OTOP2 shRNA Plasmid (h): sc-93831-SH and OTOP2 shRNA (h) Lentiviral Particles: sc-93831-V.

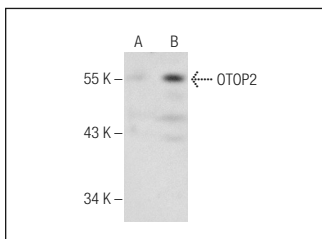
Molecular Weight of OTOP2: 62 kDa.

Positive Controls: OTOP2 (h): 293T Lysate: sc-172970.

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



OTOP2 (T-13): sc-136785. Western blot analysis of OTOP2 expression in non-transfected: sc-117752 (A) and human OTOP2 transfected: sc-172970 (B) 293T whole cell lysates

RESEARCH USE

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