

Otoferlin (C-12): sc-271092

BACKGROUND

Otoferlin is a single-pass type II membrane protein composed of 1,230 amino acid residues. Otoferlin exists in four isoforms; isoform 1 is the full-length Otoferlin protein, whereas isoforms 2-4 are shorter versions of the protein. Expression of isoforms 1 and 3 is demonstrated in adult brain, while isoform 2 is expressed in the fetus, adult brain, heart, placenta, skeletal muscle and kidney tissues. Otoferlin has three C2 domains and a single carboxy-terminal transmembrane domain. The Otoferlin gene, OTOF, and its surrounding genes map to 2p23.3, and the 5' region of OTOF is centromeric. Mutations in the OTOF gene are implicated in deafness. Otoferlin is homologous to the *C. elegans* spermatogenesis factor FER-1 and to human dysferlin, implicating the involvement of Otoferlin in the Ca²⁺-triggered synaptic vesicle-plasma membrane fusion.

REFERENCES

1. Starr, A., et al. 1998. Transient deafness due to temperature-sensitive auditory neuropathy. *Ear Hear.* 19: 169-179.
2. Yasunaga, S., et al. 1999. A mutation in OTOF, encoding Otoferlin, a FER-1-like protein, causes DFNB9, a nonsyndromic form of deafness. *Nat. Genet.* 21: 363-369.
3. Adato, A., et al. 2000. Deafness heterogeneity in a Druze isolate from the Middle East: novel OTOF and PDS mutations, low prevalence of GJB2 35delG mutation and indication for a new DFNB locus. *Eur. J. Hum. Genet.* 8: 437-442.

CHROMOSOMAL LOCATION

Genetic locus: OTOF (human) mapping to 2p23.3; Otof (mouse) mapping to 5 B1.

SOURCE

Otoferlin (C-12) is a mouse monoclonal antibody raised against amino acids 691-840 mapping within an internal region of Otoferlin of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Otoferlin (C-12) is available conjugated to agarose (sc-271092 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271092 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271092 PE), fluorescein (sc-271092 FITC), Alexa Fluor® 488 (sc-271092 AF488), Alexa Fluor® 546 (sc-271092 AF546), Alexa Fluor® 594 (sc-271092 AF594) or Alexa Fluor® 647 (sc-271092 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271092 AF680) or Alexa Fluor® 790 (sc-271092 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Otoferlin (C-12) is recommended for detection of Otoferlin 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 Otoferlin siRNA (h): sc-61269, Otoferlin siRNA (m): sc-61270, Otoferlin siRNA (r): sc-270427, Otoferlin shRNA Plasmid (h): sc-61269-SH, Otoferlin shRNA Plasmid (m): sc-61270-SH, Otoferlin shRNA Plasmid (r): sc-270427-SH, Otoferlin shRNA (h) Lentiviral Particles: sc-61269-V, Otoferlin shRNA (m) Lentiviral Particles: sc-61270-V and Otoferlin shRNA (r) Lentiviral Particles: sc-270427-V.

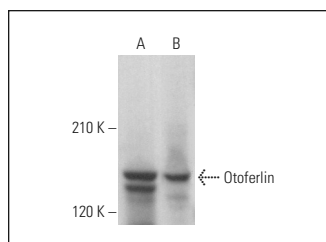
Molecular Weight of Otoferlin: 141 kDa.

Positive Controls: DU 145 cell lysate: sc-2268, mouse brain extract: sc-2253 or DU 145 cell lysate: sc-2268.

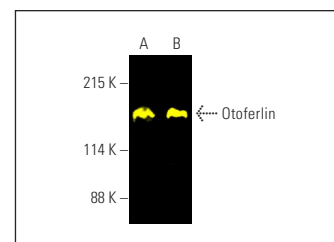
RECOMMENDED SUPPORT REAGENTS

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



Otoferlin (C-12): sc-271092. Western blot analysis of Otoferlin expression in mouse brain (A) and rat brain (B) tissue extracts.



Otoferlin (C-12) Alexa Fluor® 488: sc-271092 AF488. Direct fluorescent western blot analysis of Otoferlin expression in DU 145 (A) and MDA-MB-231 (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2020. Membrane fusion FerA domains enhance adeno-associated virus vector transduction. *Biomaterials* 241: 119906.
2. Ding, H., et al. 2022. Membrane protein OTOF is a type I interferon-induced entry inhibitor of HIV-1 in macrophages. *mBio* 13: e0173822.

RESEARCH USE

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