

Myosin IIIa (D-14): sc-163105

BACKGROUND

Myosins are highly conserved, ubiquitously expressed proteins that interact with Actin to generate the force for cellular movements. The human genome encodes over 40 different myosin genes which are divided into distinct classes, the most notable of which are the conventional myosins (class II) and the unconventional myosins (classes I and III through XV). Myosin IIIA, also known as MYO3A or DFN30, is a 1,616 amino acid class III myosin that contains one protein kinase domain, one myosin head-like domain and 3 IQ domains. Highly expressed in pancreas, cochlea and retinal pigment cells, Myosin IIIa is thought to function as an Actin-based motor that may play a role in both vision and hearing. Additionally, via its protein kinase domain, Myosin IIIa is able to catalyze the ATP-dependent phosphorylation of a variety of target proteins. Defects in the gene encoding Myosin IIIa are the cause of non-syndromic sensorineural deafness autosomal recessive type 30 (DFNB30), a form of hearing loss that is caused by damage to neural receptors in the brain or inner ear.

REFERENCES

1. Dosé, A.C., et al. 2000. Cloning and chromosomal localization of a human class III myosin. *Genomics* 67: 333-342.
2. Walsh, T., et al. 2002. From flies' eyes to our ears: mutations in a human class III myosin cause progressive nonsyndromic hearing loss DFN30. *Proc. Natl. Acad. Sci. USA* 99: 7518-7523.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606808. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Komaba, S., et al. 2003. Determination of human Myosin III as a motor protein having a protein kinase activity. *J. Biol. Chem.* 278: 21352-21360.
5. Les Erickson, F., et al. 2003. Localization of a class III myosin to filopodia tips in transfected HeLa cells requires an Actin-binding site in its tail domain. *Mol. Biol. Cell* 14: 4173-4180.

CHROMOSOMAL LOCATION

Genetic locus: MYO3A (human) mapping to 10p12.1; Myo3a (mouse) mapping to 2 A3.

SOURCE

Myosin IIIa (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Myosin IIIa 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.

Blocking peptide available for competition studies, sc-163105 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Myosin IIIa (D-14) is recommended for detection of Myosin IIIa 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); non cross-reactive with Myosin IIIb.

Suitable for use as control antibody for Myosin IIIa siRNA (h): sc-90539, Myosin IIIa siRNA (m): sc-149758, Myosin IIIa shRNA Plasmid (h): sc-90539-SH, Myosin IIIa shRNA Plasmid (m): sc-149758-SH, Myosin IIIa shRNA (h) Lentiviral Particles: sc-90539-V and Myosin IIIa shRNA (m) Lentiviral Particles: sc-149758-V.

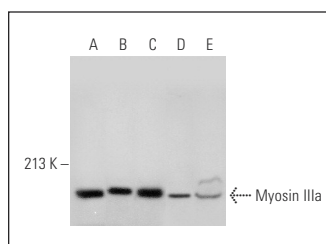
Molecular Weight of Myosin IIIa: 209 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, Jurkat whole cell lysate: sc-2204 or Y79 cell lysate: sc-2240.

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



Myosin IIIa (D-14): sc-163105. Western blot analysis of Myosin IIIa expression in Jurkat (A), HEK293 (B), Y79 (C), NIH/3T3 (D) and KNRK (E) whole cell lysates.

STORAGE

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

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Try **Myosin IIIa (RR-8): sc-100953**, our highly recommended monoclonal alternative to Myosin IIIa (D-14).