

Myosin IXb (C-15): sc-48246

BACKGROUND

Myosin IXb, also designated Myosin 9B, MYO9B, CELIAC4 and MYR5, is a single-headed myosin that moves processively on actin filaments in the minus-end direction, making it the first myosin superfamily member identified that travels in the reverse direction. Isolated cDNAs of human Myosin IXB from liver and small intestine libraries encode a 2,022 amino acid protein that maps to chromosome 19p13.11. Studies indicate that Myosin IXb binds calmodulin through IQ motifs situated in its neck domain and, like other CALM1-containing myosins, exhibits maximal velocity of actin filaments in the absence of calcium, contains putative calmodulin light chains and is a calcium-regulated, mechanochemically active motor that demonstrates Rho GAP activity. Research has shown a significant and replicable association of celiac disease to a common irregularity located in intron 28 of the myosin IXB gene, which encodes an atypical myosin molecule that functions in the remodeling of actin in epithelial enterocytes. Individuals homozygous with respect to the at-risk allele have a 2.3-times higher risk of celiac disease.

REFERENCES

- Bähler, M., et al. 1997. Physical mapping of human Myosin IXb (MYO9B), the human ortholog of the rat Myosin MYR5, to chromosome 19p13.1. *Genomics* 43: 107-109.
- Post, P.L., et al. 1998. Human Myosin IXb is a mechanochemically active motor and a GAP for Rho. *J. Cell Sci.* 111: 941-950.
- Inoue, A., et al. 2002. Myosin IXb is a single-headed minus-end-directed processive motor. *Nat. Cell Biol.* 4: 302-306.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602129. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Post, P.L., et al. 2002. Myosin-IXb is a single-headed and processive motor. *J. Biol. Chem.* 277: 11679-11683.
- O'Connell, C.B. and Mooseker, M.S. 2003. Native Myosin-IXb is a plus-, not a minus-end-directed motor. *Nat. Cell Biol.* 5: 171-172.
- Monsuur, A.J., et al. 2005. Myosin IXb variant increases the risk of celiac disease and points toward a primary intestinal barrier defect. *Nat. Genet.* 37: 1341-1344.
- Saeki, N., et al. 2005. BIG1 is a binding partner of Myosin IXb and regulates its Rho-GTPase activating protein activity. *J. Biol. Chem.* 280: 10128-10134.
- Nalavadi, V., et al. 2005. Kinetic mechanism of Myosin IXb and the contributions of two class IX-regions. *J. Biol. Chem.* 280: 38957-38968.

CHROMOSOMAL LOCATION

Genetic locus: MYO9B (human) mapping to 19p13.11; Myo9b (mouse) mapping to 8 B3.3.

SOURCE

Myosin IXb (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Myosin IXb 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-48246 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Myosin IXb (C-15) is recommended for detection of Myosin IXb Long and Short isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Myosin IXb (C-15) is also recommended for detection of Myosin IXb Long and Short isoforms in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Myosin IXb siRNA (h): sc-61124, Myosin IXb siRNA (m): sc-61125, Myosin IXb shRNA Plasmid (h): sc-61124-SH, Myosin IXb shRNA Plasmid (m): sc-61125-SH, Myosin IXb shRNA (h) Lentiviral Particles: sc-61124-V and Myosin IXb shRNA (m) Lentiviral Particles: sc-61125-V.

Molecular Weight of Myosin IXb: 229 kDa.

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) 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.

SELECT PRODUCT CITATIONS

- Lentsch, A.B., et al. 2007. The Ron receptor tyrosine kinase regulates acute lung injury and suppresses nuclear factor κB activation. *Shock* 27: 274-280.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.