

MYH9 (H-40): sc-98978

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. Myosin is a hexamer of two heavy chains (MHC) and four light chains (MLC) that interacts with Actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. Myosin heavy chain 9 (MYH9) can also be designated Myosin IIa, nonmuscle myosin heavy chain IIa, cellular myosin heavy chain, type A, myosin-9, or NMMHC-IIA. MYH9 is involved in cell shape, cytokinesis and specialized functions such as capping and secretion. It is expressed in leukocytes and in kidney glomeruli. Defects in the MYH9 gene are linked to Sebastian syndrome (SBS), Fechtner syndrome (FTNS), Alport syndrome with macrothrombocytopenia (APSM), autosomal dominant nonsyndromic sensorineural deafness 17 (DFNA17) and Epstein syndrome (EPS).

REFERENCES

1. Saez, C.G., et al. 1990. Human nonmuscle myosin heavy chain mRNA: generation of diversity through alternative polyadenylation. *Proc. Natl. Acad. Sci. USA* 87: 1164-1168.
2. Lalwani, A.K., et al. 2000. Human nonsyndromic hereditary deafness DFNA17 is due to a mutation in nonmuscle myosin MYH9. *Am. J. Hum. Genet.* 67: 1121-1128.
3. Seri, M., et al. 2000. Mutations in MYH9 result in the May-Hegglin anomaly, and fechtner and sebastian syndromes. The May-Hegglin/fechtner syndrome consortium. *Nat. Genet.* 26: 103-105.
4. Heath, K.E., et al. 2001. Nonmuscle myosin heavy chain IIa mutations define a spectrum of autosomal dominant macrothrombocytopenias: May-Hegglin anomaly and fechtner, sebastian, epstein, and Alport-like syndromes. *Am. J. Hum. Genet.* 69: 1033-1045.
5. Deutsch, S., et al. 2003. Asp1424Asn MYH9 mutation results in an unstable protein responsible for the phenotypes in May-Hegglin anomaly/fechtner syndrome. *Blood* 102: 529-534.
6. Ramamurthy, B., et al. 2004. Kinetic mechanism of blebbistatin inhibition of nonmuscle myosin IIb. *Biochemistry* 43: 14832-14839.
7. Meshel, A.S., et al. 2005. Basic mechanism of three-dimensional collagen fibre transport by fibroblasts. *Nat. Cell Biol.* 7: 157-164.

CHROMOSOMAL LOCATION

Genetic locus: MYH9 (human) mapping to 22q12.3; Myh9 (mouse) mapping to 15 E1.

SOURCE

MYH9 (H-40) is a rabbit polyclonal antibody raised against amino acids 1741-1780 mapping near the C-terminus of myosin heavy chain 9 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.

APPLICATIONS

MYH9 (H-40) is recommended for detection of myosin heavy chain 9 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), 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).

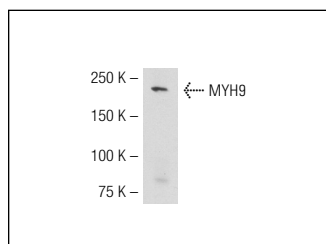
MYH9 (H-40) is also recommended for detection of myosin heavy chain 9 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for MYH9 siRNA (h): sc-61120, MYH9 siRNA (m): sc-61121, MYH9 shRNA Plasmid (h): sc-61120-SH, MYH9 shRNA Plasmid (m): sc-61121-SH, MYH9 shRNA (h) Lentiviral Particles: sc-61120-V and MYH9 shRNA (m) Lentiviral Particles: sc-61121-V.

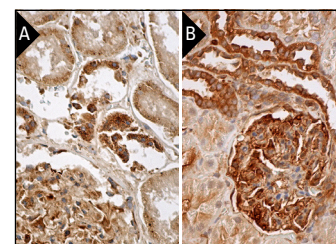
Molecular Weight of MYH9: 226 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or rat skeletal muscle extract: sc-364810.

DATA



MYH9 (H-40): sc-98978. Western blot analysis of MYH9 expression in rat skeletal muscle tissue extract.



MYH9 (H-40): sc-98978. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and tubules (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli and cells in tubules (B).

SELECT PRODUCT CITATIONS

1. Shao, H., et al. 2010. α -actinin-4 is essential for maintaining the spreading, motility and contractility of fibroblasts. *PLoS ONE* 5: e13921.
2. Feng, C., et al. 2012. Kindlin-3 mediates integrin α L β 2 outside-in signaling, and it interacts with scaffold protein receptor for activated-C kinase 1 (RACK1). *J. Biol. Chem.* 287: 10714-10726.
3. Cao, H.H., et al. 2015. A three-protein signature and clinical outcome in esophageal squamous cell carcinoma. *Oncotarget* 6: 5435-5448.

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.