SANTA CRUZ BIOTECHNOLOGY, INC.

myocilin (F-12): sc-137233

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

myocilin is an extracellular protein expressed in the eye, including the retina, trabecular meshwork and ciliary body. myocilin can form homomultimers *in vivo* and can also associate with components of the ECM via interactions with the Hep II domain of Fibronectin. In addition, myocilin interacts with Myosin regulatory light chain, a component of the Myosin motor protein complex. This interaction implies a role for myocilin in the actomyosin system, linking myocilin to the functional status of the trabecular meshwork™, which is responsible for controlling the intraocular pressure (IOP). Alterations in functions of the TM may lead to IOP elevation and development of glaucoma, a major cause of blindness. myocilin is encoded by MYOC (also designated TIGR), a gene that maps to the GLC1A locus on chromosome 1q24.3 and is susceptible to mutations. Mutations in the MYOC gene are specifically linked with primary open angle glaucoma (POAG), a blinding disease characterized by progressive loss of retinal ganglion cells.

CHROMOSOMAL LOCATION

Genetic locus: MYOC (human) mapping to 1q24.3; Myoc (mouse) mapping to 1 H2.1.

SOURCE

myocilin (F-12) is a mouse monoclonal antibody raised against amino acids 240-370 mapping within an internal region of myocilin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

myocilin (F-12) is available conjugated to agarose (sc-137233 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-137233 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137233 PE), fluorescein (sc-137233 FITC), Alexa Fluor® 488 (sc-137233 AF488), Alexa Fluor® 546 (sc-137233 AF546), Alexa Fluor® 594 (sc-137233 AF594) or Alexa Fluor® 647 (sc-137233 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137233 AF680) or Alexa Fluor® 790 (sc-137233 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

myocilin (F-12) is recommended for detection of myocilin 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 myocilin siRNA (h): sc-40753, myocilin siRNA (m): sc-40754, myocilin shRNA Plasmid (h): sc-40753-SH, myocilin shRNA Plasmid (m): sc-40754-SH, myocilin shRNA (h) Lentiviral Particles: sc-40753-V and myocilin shRNA (m) Lentiviral Particles: sc-40754-V.

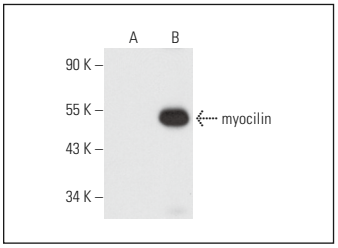
Molecular Weight of myocilin: 57 kDa.

Positive Controls: myocilin (h): 293T Lysate: sc-114465 or L8 cell lysate: sc-3807.

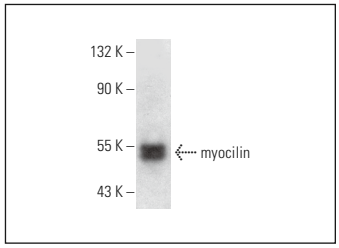
STORAGE

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

DATA



myocilin (F-12): sc-137233. Western blot analysis of myocilin expression in non-transfected: sc-117752 (**A**) and human myocilin transfected: sc-114465 (**B**) 293T whole cell lysates.



myocilin (F-12): sc-137233. Western blot analysis of myocilin expression in L8 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zode, G.S., et al. 2011. Reduction of ER stress via a chemical chaperone prevents disease phenotypes in a mouse model of primary open angle glaucoma. J. Clin. Invest. 121: 3542-3553.
2. Zode, G.S., et al. 2014. Ocular-specific ER stress reduction rescues glaucoma in murine glucocorticoid-induced glaucoma. J. Clin. Invest. 124: 1956-1965.
3. Patterson-Orazem, A.C., et al. 2018. Epitope mapping of commercial antibodies that detect myocilin. Exp. Eye Res. 173: 109-112.
4. Ashok, A., et al. 2019. Prion protein modulates endothelial to mesenchyme-like transition in trabecular meshwork cells: implications for primary open angle glaucoma. Sci. Rep. 9: 13090.
5. Yang, Y., et al. 2020. Cross-talk between MYOC p. Y437H mutation and TGF-β2 in the pathology of glaucoma. Int. J. Med. Sci. 17: 1062-1070.
6. Xiong, S., et al. 2021. Stem cell transplantation rescued a primary open-angle glaucoma mouse model. Elife 10: e63677.
7. Sun, D., et al. 2022. Long-term and potent IOP-lowering effect of IκBα-siRNA in a nonhuman primate model of chronic ocular hypertension. iScience 25: 104149.
8. Li, H., et al. 2023. Elevated angiotensin-II levels contribute to the pathogenesis of open-angle glaucoma via inducing the expression of fibrosis-related genes in trabecular meshwork cells through a ROS/NOX4/SMAD3 axis. Cell Transplant. 32: 9636897231162526.
9. Yan, X., et al. 2024. Serine to proline mutation at position 341 of MYOC impairs trabecular meshwork function by causing autophagy deregulation. Cell Death Discov. 10: 21.

RESEARCH USE

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