

MYBPC3 (F-1): sc-137181

BACKGROUND

MYBPC3 (myosin-binding protein C, cardiac) encodes the cardiac isoform of the thick-filament myosin-binding protein C. It is found in the crossbridge-bearing zone (C region) of A bands in vertebrate striated muscle. Regulatory phosphorylation of MYBPC3 by cAMP-dependent protein kinase (PKA) upon adrenergic stimulation may be linked to modulation of cardiac contraction. MYBPC3 binds F-Actin, MHC and native thin filaments, and modifies the activity of Actin-activated myosin ATPase. Mutations in the MYBPC3 gene lead mainly to truncation of the protein, which results in one cause of familial hypertrophic cardiomyopathy type 4 (CMH4), a heart disorder characterized by ventricular hypertrophy, which often involves the interventricular septum and is usually asymmetric. The MYBPC3 gene maps to chromosome 11p11.2.

CHROMOSOMAL LOCATION

Genetic locus: MYBPC3 (human) mapping to 11p11.2; Mybpc3 (mouse) mapping to 2 E1.

SOURCE

MYBPC3 (F-1) is a mouse monoclonal antibody raised against amino acids 1-120 mapping at the N-terminus of MYBPC3 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.

MYBPC3 (F-1) is available conjugated to agarose (sc-137181 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137181 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137181 PE), fluorescein (sc-137181 FITC), Alexa Fluor® 488 (sc-137181 AF488), Alexa Fluor® 546 (sc-137181 AF546), Alexa Fluor® 594 (sc-137181 AF594) or Alexa Fluor® 647 (sc-137181 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137181 AF680) or Alexa Fluor® 790 (sc-137181 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

MYBPC3 (F-1) is recommended for detection of MYBPC3 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 MYBPC3 siRNA (h): sc-61111, MYBPC3 siRNA (m): sc-61112, MYBPC3 shRNA Plasmid (h): sc-61111-SH, MYBPC3 shRNA Plasmid (m): sc-61112-SH, MYBPC3 shRNA (h) Lentiviral Particles: sc-61111-V and MYBPC3 shRNA (m) Lentiviral Particles: sc-61112-V.

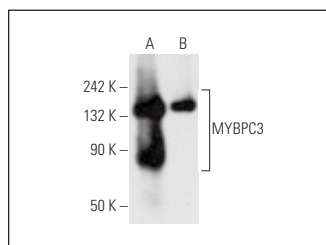
Molecular Weight of MYBPC3: 144 kDa.

Positive Controls: rat postnatal heart tissue extract, rat heart extract: sc-2393 or mouse heart extract: sc-2254.

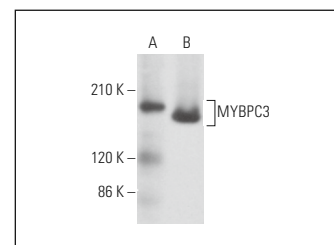
RECOMMENDED SUPPORT REAGENTS

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



MYBPC3 (F-1): sc-137181. Western blot analysis of MYBPC3 expression in mouse heart (A) and rat heart (B) tissue extracts.



MYBPC3 (F-1): sc-137181. Western blot analysis of MYBPC3 expression in mouse heart (A) and rat postnatal heart (B) tissue extracts.

SELECT PRODUCT CITATIONS

- Walker, L.A., et al. 2011. Biochemical and myofilament responses of the right ventricle to severe pulmonary hypertension. *Am. J. Physiol. Heart Circ. Physiol.* 301: H832-H840.
- Rosas, P.C., et al. 2019. Cardiac Myosin binding protein-C phosphorylation mitigates age-related cardiac dysfunction: hope for better aging? *JACC Basic Transl. Sci.* 4: 817-830.
- Flenner, F., et al. 2021. Translational investigation of electrophysiology in hypertrophic cardiomyopathy. *J. Mol. Cell. Cardiol.* 157: 77-89.
- Warnecke, N., et al. 2021. Generation of bi-allelic MYBPC3 truncating mutant and isogenic control from an iPSC line of a patient with hypertrophic cardiomyopathy. *Stem Cell Res.* 55: 102489.
- Capote, A.E., et al. 2021. B-arrestin-2 signaling is important to preserve cardiac function during aging. *Front. Physiol.* 12: 696852.

STORAGE

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

PROTOCOLS

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

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