SANTA CRUZ BIOTECHNOLOGY, INC.

# MYBPC3 (E-7): sc-137180

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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 (E-7) 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 $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MYBPC3 (E-7) is available conjugated to agarose (sc-137180 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-137180 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137180 PE), fluorescein (sc-137180 FITC), Alexa Fluor® 488 (sc-137180 AF488), Alexa Fluor® 546 (sc-137180 AF546), Alexa Fluor® 594 (sc-137180 AF594) or Alexa Fluor® 647 (sc-137180 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137180 AF680) or Alexa Fluor® 790 (sc-137180 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

MYBPC3 (E-7) 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.

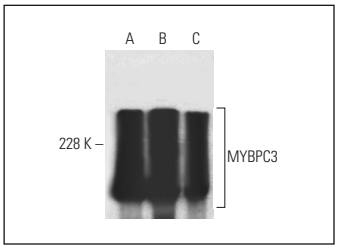
Molecular Weight of MYBPC3: 144 kDa.

Positive Controls: rat heart extract: sc-2393, mouse heart extract: sc-2254 or human heart extract: sc-363763.

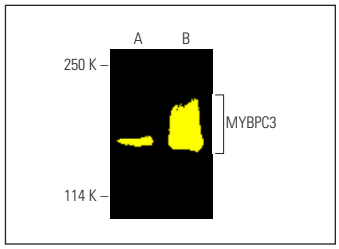
## STORAGE

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

## DATA




MYBPC3 (E-7) HRP: sc-137180 HRP. Direct western blot analysis of MYBPC3 expression in mouse heart (**A**), rat heart (**B**) and human heart (**C**) tissue extracts.




MYBPC3 (E-7): sc-137180. Fluorescent western blot analysis of MYBPC3 expression in mouse heart (**A**) and rat heart (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-$IgG_1$ BP-CFL 488: sc-533661.

## SELECT PRODUCT CITATIONS


1. Govindan, S., et al. 2012. Cardiac myosin binding protein-C is a potential diagnostic biomarker for myocardial infarction. J. Mol. Cell. Cardiol. 52: 154-164.
2. Govindan, S., et al. 2013. Increase in cardiac myosin binding protein-C plasma levels is a sensitive and cardiac-specific biomarker of myocardial infarction. Am. J. Cardiovasc. Dis. 3: 60-70.
3. Sequeira, V., et al. 2015. ADP-stimulated contraction: a predictor of thin-filament activation in cardiac disease. Proc. Natl. Acad. Sci. USA 112: E7003-E7012.
4. Scotcher, J., et al. 2016. Disulfide-activated protein kinase G Iα regulates cardiac diastolic relaxation and fine-tunes the Frank-Starling response. Nat. Commun. 7: 13187.
5. Nixon, B.R., et al. 2017. Alterations in sarcomere function modify the hyperplastic to hypertrophic transition phase of mammalian cardiomyocyte development. JCI Insight 2: e90656.
6. McClatchy, D.B., et al. 2018. Quantitative temporal analysis of protein dynamics in cardiac remodeling. J. Mol. Cell. Cardiol. 121: 163-172.
7. Kim, E.Y., et al. 2019. Distinct pathological signatures in human cellular models of myotonic dystrophy subtypes. JCI Insight 4: e122686.
8. Bogdanovic, E., et al. 2020. The sodium channel NaX: possible player in excitation-contraction coupling. IUBMB Life 72: 601-606.
9. Liu, M., et al. 2021. Magnesium deficiency causes a reversible, metabolic, diastolic cardiomyopathy. J. Am. Heart Assoc. 10: e020205.
10. Sakamoto, T., et al. 2022. The nuclear receptor ERR cooperates with the cardiogenic factor GATA4 to orchestrate cardiomyocyte maturation. Nat. Commun. 13: 1991.


## RESEARCH USE

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