

# MYBPC3 (H-9): sc-166403

## 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.

## REFERENCES

- Gautel, M., et al. 1995. Phosphorylation switches specific for the cardiac isoform of Myosin binding protein-C: a modulator of cardiac contraction? *EMBO J.* 14: 1952-1960.
- Bonne, G., et al. 1996. Cardiac Myosin binding protein-C gene splice acceptor site mutation is associated with familial hypertrophic cardiomyopathy. *Nat. Genet.* 11: 438-440.
- Carrier, L., et al. 1997. Organization and sequence of human cardiac Myosin binding protein C gene (MYBPC3) and identification of mutations predicted to produce truncated proteins in familial hypertrophic cardiomyopathy. *Circ. Res.* 80: 427-434.
- Yu, B., et al. 1998. Molecular pathology of familial hypertrophic cardiomyopathy caused in the cardiac Myosin binding protein C gene. *J. Med. Genet.* 35: 205-210.
- Moolman-Smook, J.C., et al. 1998. Identification of a new missense mutation in cardiomyopathy. *J. Med. Genet.* 35: 253-254.
- Niimura, H., et al. 1998. Mutations in the gene for cardiac Myosin-binding protein C and late-onset familial hypertrophic cardiomyopathy. *N. Engl. J. Med.* 338: 1248-1257.

## CHROMOSOMAL LOCATION

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

## SOURCE

MYBPC3 (H-9) is a mouse monoclonal antibody raised against amino acids 1-190 mapping at the N-terminus of MYBPC3 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

MYBPC3 (H-9) 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.

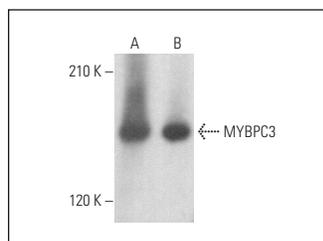
Molecular Weight of MYBPC3: 144 kDa.

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

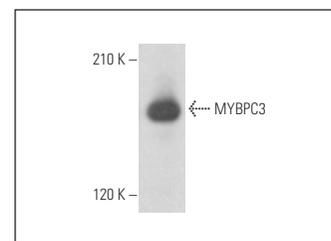
## RECOMMENDED SUPPORT REAGENTS

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 (H-9): sc-166403. Western blot analysis of MYBPC3 expression in human heart (A) and human fetal heart (B) tissue extracts.



MYBPC3 (H-9): sc-166403. Western blot analysis of MYBPC3 expression in rat heart tissue extract.

## SELECT PRODUCT CITATIONS

- Kang, M.Y., et al. 2010. Receptor-independent cardiac protein kinase C $\alpha$  activation by calpain-mediated truncation of regulatory domains. *Circ. Res.* 107: 903-912.
- Lombardi, R., et al. 2016. Cardiac fibro-adipocyte progenitors express desmosome proteins and preferentially differentiate to adipocytes upon deletion of the desmoplakin gene. *Circ. Res.* 119: 41-54.

## RESEARCH USE

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