Mouse anti-Monoclonal Antibody to Cardiac Myosin Heavy Chains (3-48 G5C7), #MM-76250-P-G5C7

DATASHEET

Product name: Cardiac Myosin Heavy Chains antibody

Background information: Myosin is a highly conserved, ubiquitously expressed protein that hydrolyzes ATP, and this reaction provides the energy required for muscle contraction that interacts with actin to generate the force for cellular movements. It is a hexameric protein composed of four light chains and two heavy chains, each containing an actin-binding site and an ATP hydrolysis site. The heavy chains are encoded by the MYH gene family and were first isolated from a human fetal skeletal muscle and are the major determinant in the speed of contraction of skeletal muscle. Cardiac myosin exists as two isoforms in humans, α-cardiac myosins and β-cardiac myosins. These two isoforms are expressed in different amounts in the human heart. β-cardiac myosin is the predominant form during normal physiology while the α-isoform contributes for approximately 7% of the total myosin. Mutations of the MYH genes are associated with several different dilated and hypertrophic cardiomyopathies.

Product description: A sensitive antibody against cardiac Myosin Heavy Chains.

Format: 100 µg of purified lyophilized antibody. Reconstitute in 100 µl of distilled H2O for a 1 µg/µl solution. It contains no additives.

Species: Mouse

Clonality: Monoclonal

Isotype: IgG1κ

Reactivity / specificity: This antibody recognizes alpha and beta type heavy chains of light meromyosin fragments (LMM) of cardiac myosin heavy chains. It also reacts with LMM fragments of cardiac myosin and beta heavy chain of slow human skeletal muscle. The antibody does not crossreact with human myosin light chains. Specific for: human, rat and mouse; other species not tested but it is expected to also recognize α and β heavy chain from canine, bovine and rabbit cardiac tissues.

Applications: ELISA (E), Western blot (WB), Immunofluorescence (IF) and Immunohistochemistry (IHC)

Recommended starting dilutions: if diluted in 100 µL: WB: 1:500, IHC: 1:300. Optimal dilution has to be determined by the user.

Storage: Lyophilized antibody can be kept at 4°C for up to 3 months and should be kept at -20°C for long-term storage. To avoid freeze-thaw cycles, reconstituted antibody should be aliquoted before freezing for short-term storage (-20°C) or for long-term storage (-80°C). For maximum recovery of product, centrifuge the original vial prior to removing the cap. Further dilutions can be made in assay buffer.

Stability: Minimum 1 year from reception date.

Limitations: This product is to be used for research purposes only.

Formaldehyde-fixed paraffin-embedded (FFPE) Tissue Slides. Human heart ventricle following immunostaining with cMHC 3-48 and irrelevant NeuAc monoclonal antibody at low microscopical magnification.

A: cMHC 3-48-labeled cardiomyocytes. FFPE section of human heart ventricle was submitted to HIAR condition with citrate buffer prior to immunostaining. Immunostaining was revealed following incubation with biotinylated goat anti-mouse IgG, 20 minutes at 20°C and horse radish peroxidase – dianaminobenzidine enzymatic reaction causing brown precipitate to appear at the sites of primary antibody binding.

B: Control immunostaining performed following HIAR condition on the same microscopical slide with NeuAc monoclonal antibody showing no immunostaining but presence of light background, emphasizing specificity of immunostaining in (A).

Magnification x30

C: Fragment of the same slide as in (A) with heart ventricle cardiomyocytes immunostained (brown). Magnification x580

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