

Anti-Alpha-cardiac actin Antibody [33-32]

M1206-1



Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat, Zebrafish
Applications:	WB, IF-Cell, IHC-P, IF-Tissue, IHC-Fr
Molecular Wt:	Predicted band size: 42 kDa
Clone number:	33-32

Description: ACTC1 encodes cardiac muscle alpha actin. This isoform differs from the alpha actin that is expressed in skeletal muscle, ACTA1. Alpha cardiac actin is the major protein of the thin filament in cardiac sarcomeres, which are responsible for muscle contraction and generation of force to support the pump function of the heart. Actin is a dynamic structure that can adapt two states of flexibility, with the greatest difference between the states occurring as a result of movement within sub-domain 2. Myosin binding increases the flexibility of actin, and cross-linking studies have shown that myosin subfragment-1 binds to actin amino acid residues 48-67 within actin sub-domain 2, which may account for this effect. It has been suggested that the ACTC1 gene has a role during development. Experiments in chick embryos found an association between ACTC1 knockdown and a reduction in the atrial septa. Polymorphisms in ACTC1 have been linked to Dilated Cardiomyopathy in a small number of Japanese patients. Further studies in patients from South Africa found no association. The E101K missense mutation has been associated with Hypertrophic Cardiomyopathy and Left Ventricular Noncompaction. Another mutation has in the ACTC1 gene has been associated with atrial septal defects.

Immunogen: Synthetic peptide within Human Alpha-cardiac actin aa 1-50 / 377.

Positive control: Mouse lung tissue lysate, mouse heart tissue lysate, rat heart tissue lysate, HeLa, human heart tissue, mouse heart tissue, rat heart tissue.

Subcellular location: Cytoplasm, cytoskeleton.

Database links: SwissProt: P68032 Human | P68033 Mouse | P68035 Rat

Recommended Dilutions:

WB	1:1,000
IF-Cell	1:50
IHC-P	1:1,000
IF-Tissue	1:200
IHC-Fr	1:500

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4°C. Store at +4°C short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20°C long term.

Purity: Protein A affinity purified.

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Orders:0086-571-88062880

Technical:0086-571-89986345

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Images

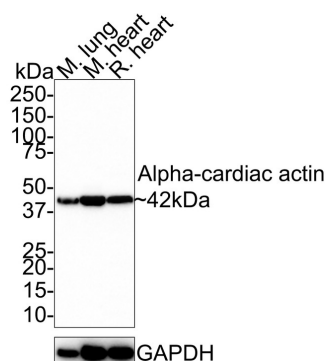


Fig1: Western blot analysis of Alpha-cardiac actin on different lysates with Mouse anti-Alpha-cardiac actin antibody (M1206-1) at 1/1,000 dilution.

Lane 1: Mouse lung tissue lysate (40 μ g/Lane)
 Lane 2: Mouse heart tissue lysate (40 μ g/Lane)
 Lane 3: Rat heart tissue lysate (40 μ g/Lane)

Predicted band size: 42 kDa
 Observed band size: 42 kDa

Exposure time: 3 minutes; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDm/TBST for 1 hour at room temperature. The primary antibody (M1206-1) at 1/1,000 dilution was used in 5% NFDm/TBST at 4°C overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

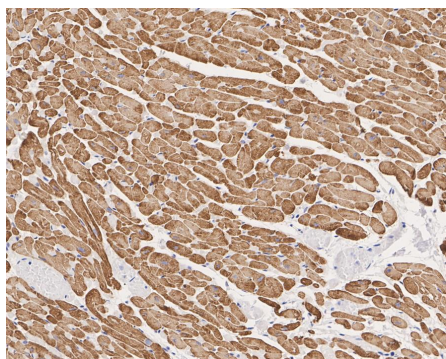


Fig2: Immunohistochemical analysis of paraffin-embedded human heart tissue with Mouse anti-Alpha-cardiac actin antibody (M1206-1) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (M1206-1) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

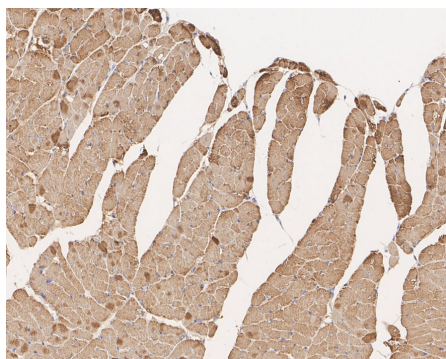


Fig3: Immunohistochemical analysis of paraffin-embedded mouse heart tissue with Mouse anti-Alpha-cardiac actin antibody (M1206-1) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (M1206-1) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

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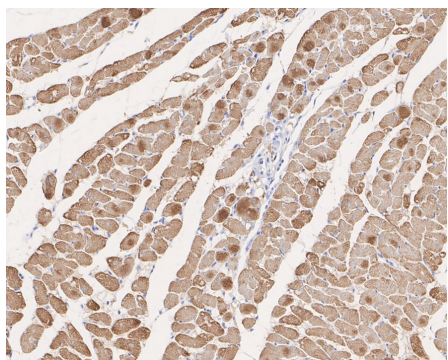


Fig4: Immunohistochemical analysis of paraffin-embedded rat heart tissue with Mouse anti-Alpha-cardiac actin antibody (M1206-1) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH₂O and PBS, and then probed with the primary antibody (M1206-1) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

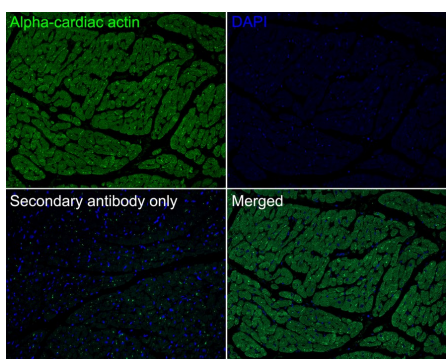


Fig5: Immunofluorescence analysis of paraffin-embedded human heart tissue labeling Alpha-cardiac actin with Mouse anti-Alpha-cardiac actin antibody (M1206-1) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (M1206-1, green) at 1/200 dilution overnight at 4 °C, washed with PBS. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

Fig6: Application: IHC-Fr

Species: Mouse

Site: heart

Sample: Frozen section

Antibody concentration: 1/500

Antigen retrieval: Not required

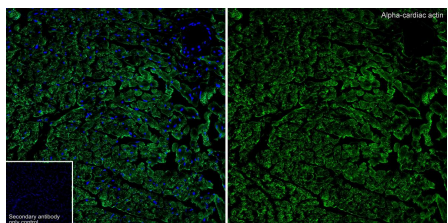


Fig7: Application: IHC-Fr

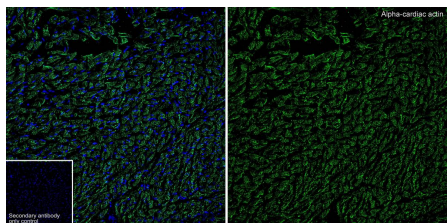
Species: Rat

Site: heart

Sample: Frozen section

Antibody concentration: 1/500

Antigen retrieval: Not required



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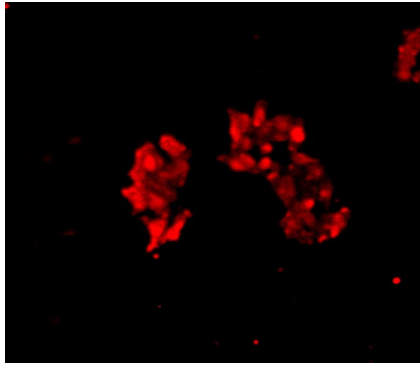


Fig8: Immunofluorescent staining of HeLa cells using anti-Alpha-cardiac actin Mouse mAb (Cat. # M1206-1).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. The MGC Project Team. *Genome Res.* 14:2121-2127(2004).
2. Leader D.P., Gall I., Campbell P.C. *Biosci. Rep.* 6:741-747(1986).
3. Carninci P., Kasukawa T., Katayama S.etc. *Science* 309:1559-1563(2005).

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