Anti-Pan-Actin Antibody [A2E1]

HA600032

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell
Molecular Wt:	Predicted band size: 42 kDa
Clone number:	A2E1

Description: Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells. 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. ACTA2 (actin alpha 2) is an actin protein with several aliases including alpha-actin, alpha-actin-2, aortic smooth muscle or alpha smooth muscle actin (α-SMA, SMactin, alpha-SM-actin, ASMA). Actins are a family of globular multi-functional proteins that form microfilaments. ACTA2 is one of 6 different actin isoforms and is involved in the contractile apparatus of smooth muscle. ACTA2 (as with all the actins) is extremely highly conserved and found in nearly all mammals. Actin, alpha skeletal muscle is a protein that in humans is encoded by the ACTA1 gene. Actin alpha 1 which is expressed in skeletal muscle is one of six different actin isoforms which have been identified. Actins are highly conserved proteins that are involved in cell motility, structure and integrity. Alpha actins are a major constituent of the contractile apparatus.

Immunogen: Synthetic peptide corresponding to N terminal of Human Alpha actin (smooth muscle, skeletal muscle, cardiac muscle).

Positive control: A431 cell lysate, MCF7 cell lysate, HEK-293 cell lysate, NIH/3T3 cell lysate, PC-12 cell lysate, mouse smooth muscle tissue lysate, rat heart tissue lysate, HeLa, human heart tissue, human skeletal muscle tissue, mouse heart tissue, mouse skeletal muscle tissue, rat heart tissue, rat skeletal muscle tissue.

Subcellular location: Cytoplasm, Cytoskeleton

Database links: SwissProt: P68133 Human | P68032 Human | P62736 Human | P68134 Mouse | P68033 Mouse | P62737 Mouse | P68136 Rat | P68035 Rat | P62738 Rat

Recommended Dilutions:

WB	1:1,000
IHC-P	1:10,000
IF-Cell	1:100

Storage Buffer: 1*TBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

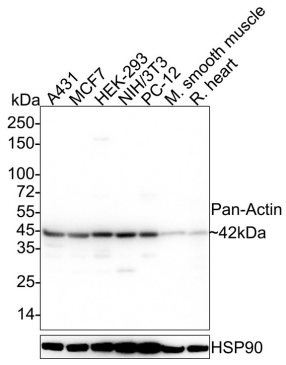

Fig1: Western blot analysis of Pan-Actin on different lysates with Mouse anti-Pan-Actin antibody (HA600032) at 1/1,000 dilution.

Lane 1: A431 cell lysate (20 µg/Lane)
Lane 2: MCF7 cell lysate (20 µg/Lane)
Lane 3: HEK-293 cell lysate (20 µg/Lane)
Lane 4: NIH/3T3 cell lysate (20 µg/Lane)
Lane 5: PC-12 cell lysate (20 µg/Lane)
Lane 6: Mouse smooth muscle tissue lysate (40 µg/Lane)
Lane 7: Rat heart tissue lysate (40 µg/Lane)

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

Exposure time: 9 seconds;

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 (HA600032) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

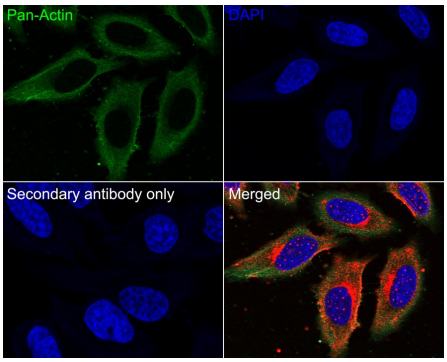

Fig2: Immunocytochemistry analysis of HeLa cells labeling Pan-Actin with Mouse anti-Pan-Actin antibody (HA600032) at 1/100 dilution.

Cells were fixed in 100% precooled methanol for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-Pan-Actin antibody (HA600032) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

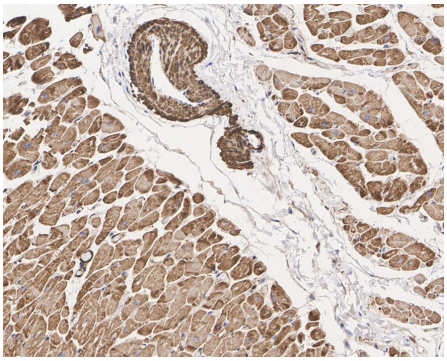

Fig3: Immunohistochemical analysis of paraffin-embedded human heart tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

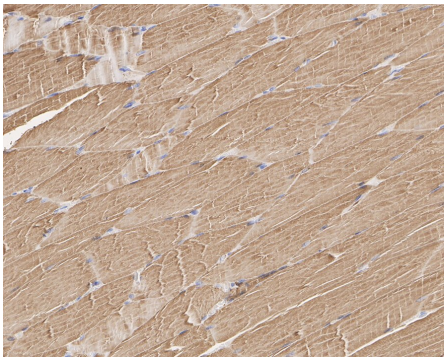

Fig4: Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

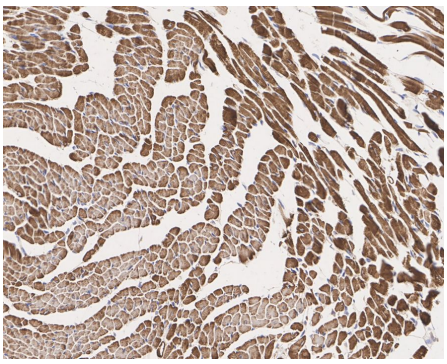

Fig5: Immunohistochemical analysis of paraffin-embedded mouse heart tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

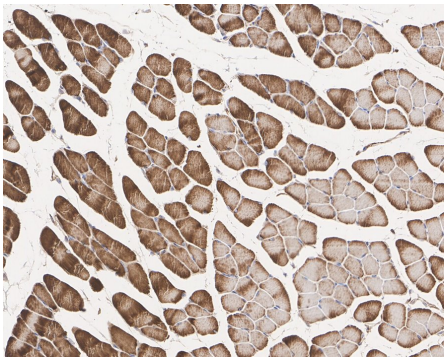

Fig6: Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

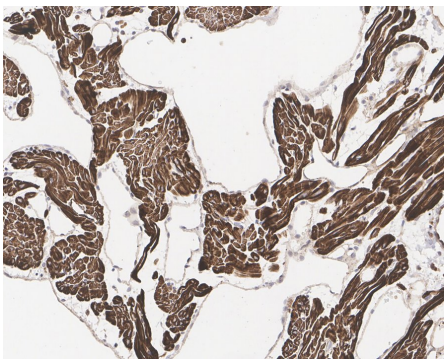

Fig7: Immunohistochemical analysis of paraffin-embedded rat heart tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

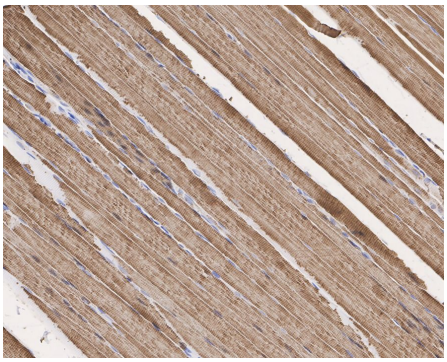

Fig8: Immunohistochemical analysis of paraffin-embedded rat skeletal muscle tissue with Mouse anti-Pan-Actin antibody (HA600032) at 1/10,000 dilution.

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 ddH_2O and PBS, and then probed with the primary antibody (HA600032) at 1/10,000 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.

Background References

1. Davidson PM et al. Actin on and around the Nucleus. Trends Cell Biol. 2021 Mar
2. Lappalainen P et al. Biochemical and mechanical regulation of actin dynamics. Nat Rev Mol Cell Biol. 2022 Dec