Anti-CaMKII delta Antibody [JA30-07]

ET1704-37

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat, Zebrafish
Applications:	WB, IHC-P
Molecular Wt:	Predicted band size: 56 kDa
Clone number:	JA30-07

Description: Calcium/calmodulin-dependent protein kinase involved in the regulation of Ca2homeostatis and excitation-contraction coupling (ECC) in heart by targeting ion channels, transporters and accessory proteins involved in Ca2influx into the myocyte, Ca2release from the sarcoplasmic reticulum (SR), SR Ca2uptake and Naand Kchannel transport. Targets also transcription factors and signaling molecules to regulate heart function. In its activated form, is involved in the pathogenesis of dilated cardiomyopathy and heart failure. Regulates Ca2influx to myocytes by binding and phosphorylating the L-type Ca2channel subunit beta-2 CACNB2. In addition to Ca2channels, can target and regulate the cardiac sarcolemmal Nachannel Nav1.5/SCN5A and the K+ channel Kv4.3/KCND3, which contribute to arrhythmogenesis in heart failure. Phosphorylates phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2, contributing to the enhancement of SR Ca2uptake that may be important in frequency-dependent acceleration of relaxation (FDAR) and maintenance of contractile function during acidosis.

Immunogen: Synthetic peptide within Human CaMKII delta aa 22-71 / 499.

Positive control: NIH/3T3 cell lysate, C6 cell lysate, HAP1 cell lysate, mouse heart tissue, zebrafish tissue, rat brain tissue, mouse skeletal muscle tissue.

Subcellular location: Sarcolemma. Sarcoplasmic reticulum membrane.

Database links: SwissProt: Q13557 Human | Q6PHZ2 Mouse | P15791 Rat

Recommended Dilutions:

WB	1:1,000-1:2,000
IHC-P	1:50-1:200

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

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

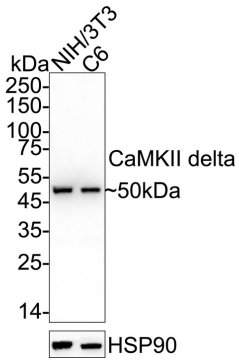

Fig1: Western blot analysis of CaMKII delta on different lysates with Rabbit anti-CaMKII delta antibody (ET1704-37) at 1/1,000 dilution.

Lane 1: NIH/3T3 cell lysate
Lane 2: C6 cell lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 56 kDa
Observed band size: 50 kDa

Exposure time: 25 seconds; 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 (ET1704-37) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

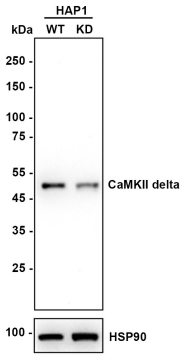

Fig2: Western blot analysis of CaMKII delta on different lysates with Rabbit anti-CaMKII delta antibody (ET1704-37) at 1/2,000 dilution.

Lane 1: HAP1-parental cell lysate
Lane 2: HAP1-CaMKII delta KD cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 56 kDa
Observed band size: 50 kDa

Exposure time: 100 seconds; 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 (ET1704-37) at 1/2,000 dilution was used in K1803 at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

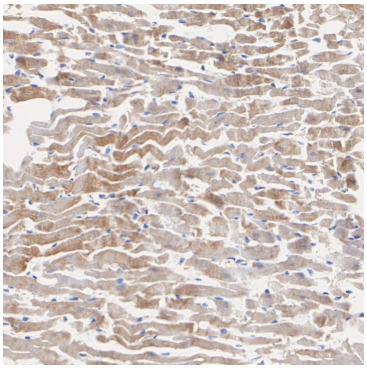

Fig3: Immunohistochemical analysis of paraffin-embedded mouse heart tissue with Rabbit anti-CaMKII delta antibody (ET1704-37) at 1/50 dilution.

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 (ET1704-37) at 1/50 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.

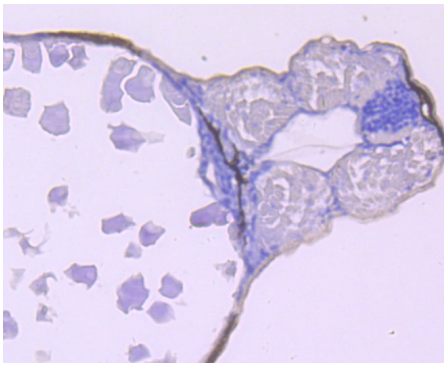

Fig4: Immunohistochemical analysis of paraffin-embedded zebrafish tissue using anti-CaMKII delta antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1704-37, 1/50) for 30 minutes 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.

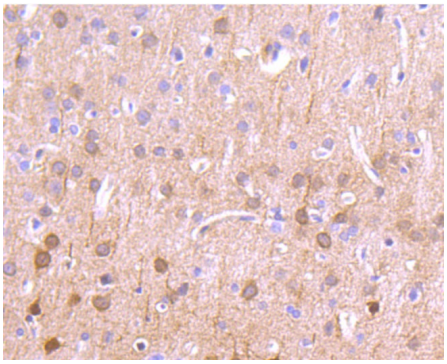

Fig5: Immunohistochemical analysis of paraffin-embedded rat brain tissue using anti-CaMKII delta antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1704-37, 1/50) for 30 minutes 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.

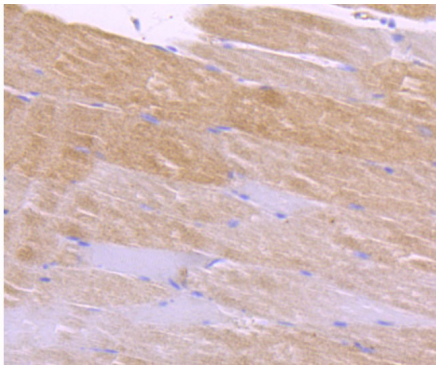

Fig6: Immunohistochemical analysis of paraffin-embedded mouse skeletal muscle tissue using anti-CaMKII delta antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1704-37, 1/50) for 30 minutes 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. Liu Let al.The H19 long noncoding RNA is a novel negative regulator of cardiomyocyte hypertrophy.Cardiovasc Res111:56-65 (2016).
2. Wei XH et al. Inhibition of late sodium current suppresses calcium-related ventricular arrhythmias by reducing the phosphorylation of CaMK-II and sodium channel expressions.Sci Rep 7(1):981 (2017).