Anti-ATP2A1 / SERCA1 Antibody [JE45-75] ET7109-43

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, IP, IHC-P
Molecular Wt:	Predicted band size: 110 kDa
Clone number:	JE45-75

Description: This gene encodes one of the SERCA Ca(2+)-ATPases, which are intracellular pumps located in the sarcoplasmic or endoplasmic reticula of muscle cells. This enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen, and is involved in muscular excitation and contraction. Mutations in this gene cause some autosomal recessive forms of Brody disease, characterized by increasing impairment of muscular relaxation during exercise. Alternative splicing results in three transcript variants encoding different isoforms. There are 3 major domains on the cytoplasmic face of SERCA: the phosphorylation and nucleotide-binding domains, which form the catalytic site, and the actuator domain, which is involved in the transmission of major conformational changes. It seems that, in addition to the calcium-transporting properties, SERCA1 generates heat in some adipocytes and can improve cold tolerance in some wood frogs.

Immunogen: Synthetic peptide within Human SERCA1 ATPase aa 1-50 / 1,001.

Positive control: Human fetal skeletal muscle tissue lysate, human fetal skeletal muscle tissue, human striated muscle tissue.

Subcellular location: Endoplasmic reticulum membrane, Sarcoplasmic reticulum membrane.

Database links: SwissProt: O14983 Human

Recommended Dilutions:

WB	1:500-1:1,000
IP	1:10-1:50
IHC-P	1:50-1:400

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

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

Purity: Protein A affinity purified.

Images

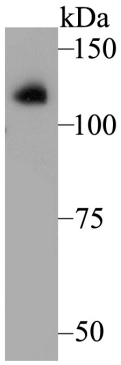

Fig1: Western blot analysis of SERCA1 ATPase on human fetal skeletal muscle tissue lysate. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody was used at a 1:500 dilution in 5% BSA at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:5,000 dilution was used for 1 hour at room temperature.

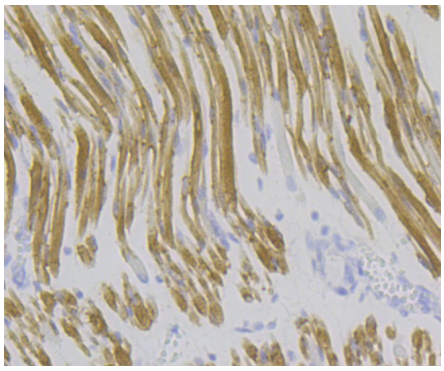

Fig2: Immunohistochemical analysis of paraffin-embedded human fetal skeletal muscle tissue using anti-SERCA1 ATPase antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (ET7109-43) at 1/200 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chrogen. Counter stained with hematoxylin and mounted with DPX.

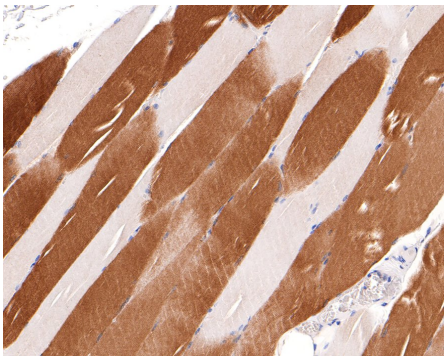

Fig3: Immunohistochemical analysis of paraffin-embedded human striated muscle tissue with Rabbit anti-ATP2A1 / SERCA1 antibody (ET7109-43) at 1/400 dilution.

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 (ET7109-43) at 1/400 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. Tupling A R et al. Enhanced Ca2+ transport and muscle relaxation in skeletal muscle from sarcolipin-null mice. Am J Physiol 301:C841-C849 (2011).
2. Bal N C et al. Sarcolipin is a newly identified regulator of muscle-based thermogenesis in mammals. Nat Med 18:1575-1579 (2012).