SERCA1 Antibody – Mouse Monoclonal

PRODUCT OVERVIEW

Product Name	SERCA1, Monoclonal Antibody
Full Product Name	SERCA1 (ATP2A1, ATPase, Ca++ transporting, Cardiac Muscle, Fast Twitch 1, ATP2A, OTTHUMP00000162562, SR Ca(2+)-ATPase 1, Calcium pump 1, Calcium-transporting ATPase sarcoplasmic reticulum Type, Fast Twitch skeletal Muscle isoform, Endoplasmic reticulum cl
Product Gene Name	anti-SERCA1 antibody
Product Synonym Gene Name	ATP2A1
Clonality	Monoclonal
Isotype	IgG1,k
Clone Number	5H8
Host	Mouse
Species Reactivity	Human
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with MaxLight550.
Purity/Purification	Purified
Specificity	Recognizes human SERCA1.
Preparation and Storage	Store product at 4 degree C in the dark. DO NOT FREEZE! Stable at 4 degree C for 12 months after receipt as an undiluted liquid. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. Caution: MaxLight550 conjugates are sensitive to light. For maximum recovery of product, centrifuge the original vial prior to removing the cap.
Molecular Weight	Calculated MW 110kDa
OMIM	108730
3D Structure	ModBase 3D Structure for O14983
Immunogen	Recombinant protein corresponding to aa522-612 from human ATP2A1 with GST tag. MW of the GST tag alone is 26kD.
Immunogen Sequence	IDRCNYVRVGTTRVPLTGPVKEKIMAVIKEWGTGRDTL RCLALATRDTPPKREEMVLDDSARFLEYETDLTFVGV VGMLDPPRKEVTGSIQ
Conjugate	MaxLight550
Product Categories/Family for anti-SERCA1 antibody	Antibodies; Enzymes; ATPase
Applications Tested/Suitable for anti-SERCA1 antibody	FLISA, Western Blot (WB)
Application Notes for anti-SERCA1 antibody	Applications are based on unconjugated antibody.
Related Product Information for anti-SERCA1 antibody	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 two transcript variants encoding different isoforms.

Other Notes	Small volumes of anti-SERCA1 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for SERCA1 purchase	MBS6215626 is an antibody targeting SERCA1. Also known as SERCA1 (ATP2A1, ATPase, Ca++ transporting, Cardiac Muscle, Fast Twitch 1, ATP2A, OTTHUMP00000162562, SR Ca(2+)-ATPase 1, Calcium pump 1, Calcium-transporting ATPase sarcoplasmic reticulum Type, Fast Twitch skeletal Muscle isoform, Endoplasmic reticulum cl. Reactive in Human. Host: Mouse.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for SERCA1. It may not necessarily be applicable to this product.

NCBI GI #	147907326
NCBI GeneID	446229
NCBI Accession #	NP_775293
UniProt Primary Accession #	O14983
GenBank Nucleotide #	NM_001092974.1
NCBI Official Full Name	ATPase, Ca++ transporting, slow twitch 2
NCBI Official Synonym Full Names	ATPase, Ca++ transporting, cardiac muscle, fast twitch 1<
NCBI Official Symbol	atp2a1
NCBI Official Synonym Symbols	atp2a; atp2a2; serca1
UniProt Protein Name	Sarcoplasmic/endoplasmic reticulum calcium ATPase 1
UniProt Synonym Protein Names	Calcium pump 1; Calcium-transporting ATPase sarcoplasmic reticulum type, fast twitch skeletal muscle isoform; Endoplasmic reticulum class 1/2 Ca(2+) ATPase
Protein Family	Sarcoplasmic/endoplasmic reticulum calcium ATPase
UniProt Gene Name	ATP2A1
UniProt Synonym Gene Names	SERCA1
UniProt Entry Name	AT2A1_HUMAN
NCBI Protein Information	ATPase, Ca++ transporting, slow twitch 2; ATPase, Ca++ transporting, slow twitch 2; ATPase, Ca++ transporting, cardiac muscle, slow twitch 2

UniProt Comments for SERCA1	ATP2A1: This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen. Contributes to calcium sequestration involved in muscular excitation/contraction. Associated with sarcolipin (SLN) and phospholamban (PLN). Increased contractile activity leads to a decrease in SERCA1 expression, while decreased contractile activity leads to an increase in SERCA1 expression. Skeletal muscle, fast twitch muscle (type II) fibers. Reversibly inhibited by phospholamban (PLN) at low calcium concentrations. Dephosphorylated PLN decreases the apparent affinity of the ATPase for calcium. This inhibition is regulated by the phosphorylation of PLN. Belongs to the cation transport ATPase (P-type) (TC 3.A.3) family. Type IIA subfamily. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Membrane protein, integral; Endoplasmic reticulum; Hydrolase; Transporter, ion channel; EC 3.6.3.8; Transporter; Membrane protein, multi-pass Chromosomal Location of Human Ortholog: 16p12.1 Cellular Component: I band; endoplasmic reticulum membrane; sarcoplasmic reticulum membrane; membrane; sarcoplasmic reticulum; perinuclear region of cytoplasm; integral to membrane; ER-Golgi intermediate compartment Molecular Function: protein binding; protein homodimerization activity; calcium-transporting ATPase activity; calcium ion binding; ATP binding Biological Process: apoptotic mitochondrial changes; positive regulation of fast-twitch skeletal muscle contraction; maintenance of mitochondrion localization; metabolic process; reduction of endoplasmic reticulum calcium ion concentration; calcium ion transport; elevation of endoplasmic reticulum calcium ion concentration; regulation of striated muscle contraction; blood coagulation; transmembrane transport; negative regulation of striated muscle contraction; elevation of mitochondrial calcium ion concentration Disease: Brody Myopathy
Research Articles on SERCA1	**1.** Atp2a1/serca1 is expressed as soon as the end of gastrulation in a subset of the myod-positive cells, and later labels prospective slow muscle cells in the superficial part of the somite.
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