

Product datasheet

Anti-SERCA2 ATPase antibody [IID8] ab2817

Recombinant

32 References 3 Images

Overview

Product name	Anti-SERCA2 ATPase antibody [IID8]
Description	Mouse monoclonal [IID8] to SERCA2 ATPase
Host species	Mouse
Specificity	Detects Sarcoplasmic or Endoplasmic Reticulum Calcium 2 (SERCA2) ATPase. This antibody does not discriminate between the two isoforms. By Western blot, this antibody detects an ~110 kDa protein representing SERCA2 ATPase from canine skeletal muscle triad preparations. Immunofluorescence staining of SECRA2 ATPase in rabbit skeletal muscle results in strong labeling of the entire type I (slow) myofiber consistent with sarcoplasmic reticulum localization. This antibody is not recommended for Western blot detection of rat SERCA2.
Tested applications	Suitable for: WB, IHC-P
Species reactivity	Reacts with: Human
Immunogen	Full length native protein (purified). This information is proprietary to Abcam and/or its suppliers.
Positive control	IHC-P: Human skeletal muscle and cardiac muscle tissue. WB: Human skeletal muscle. HeLa, HepG2, A549 and A673 whole cell lysate.
General notes	This product has switched from a hybridoma to recombinant production method on 25 th November 2020. This product is a recombinant monoclonal antibody, which offers several advantages including: <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here .

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA

Purity	Protein A purified
Primary antibody notes	ATP dependent calcium pumps are responsible, in part, for the maintenance of low cytoplasmic free calcium concentrations. The ATP pumps that reside in intracellular organelles are encoded by a family of structurally related enzymes, termed the sarcoplasmic or endoplasmic reticulum calcium (SERCA) ATPases. The SERCA1 gene is exclusively expressed in type II (fast) skeletal muscle. The SERCA2 gene is subject to tissue dependent processing which is responsible for the generation of SERCA2a muscle-specific form expressed in type I (slow) skeletal, cardiac and smooth muscle and the SERCA2b isoform expressed in all cell types. The SERCA3 gene is not as well characterized and is found in non-muscle cells.
Clonality	Monoclonal
Clone number	IID8
Isotype	IgG1

Applications

The Abpromise guarantee Our [Abpromise guarantee](#) covers the use of ab2817 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 100 kDa.
IHC-P		1/4000.

Target

Function	This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen. Isoform 2 is involved in the regulation of the contraction/relaxation cycle.
Tissue specificity	Isoform 1 is widely expressed in smooth muscle and nonmuscle tissues such as in adult skin epidermis, with highest expression in liver, pancreas and lung, and intermediate expression in brain, kidney and placenta. Also expressed at lower levels in heart and skeletal muscle. Isoforms 2 and 3 are highly expressed in the heart and slow twitch skeletal muscle. Expression of isoform 3 is predominantly restricted to cardiomyocytes and in close proximity to the sarcolemma. Both isoforms are mildly expressed in lung, kidney, liver, pancreas and placenta. Expression of isoform 3 is amplified during monocytic differentiation and also observed in the fetal heart.
Involvement in disease	<p>Defects in ATP2A2 are a cause of acrokeratosis verruciformis (AKV) [MIM:101900]; also known as Hopf disease. AKV is a localized disorder of keratinization, which is inherited as an autosomal dominant trait. Its onset is early in life with multiple flat-topped, flesh-colored papules on the hands and feet, punctate keratoses on the palms and soles, with varying degrees of nail involvement. The histopathology shows a distinctive pattern of epidermal features with hyperkeratosis, hypergranulosis, and acanthosis together with papillomatosis. These changes are frequently associated with circumscribed elevations of the epidermis that are said to resemble church spires. There are no features of dyskeratosis or acantholysis, the typical findings in lesions of Darier disease.</p> <p>Defects in ATP2A2 are the cause of Darier disease (DD) [MIM:124200]; also known as Darier-White disease (DAR). DD is an autosomal dominantly inherited skin disorder characterized by</p>

loss of adhesion between epidermal cells (acantholysis) and abnormal keratinization. Patients with mild disease may have no more than a few scattered keratotic papules or subtle nail changes, whereas those with severe disease are handicapped by widespread malodorous keratotic plaques. In a few families, neuropsychiatric abnormalities such as mild mental retardation, schizophrenia, bipolar disorder and epilepsy have been reported. Stress, UV exposure, heat, sweat, friction, and oral contraception exacerbate disease symptoms. Prevalence has been estimated at 1 in 50000. Clinical variants of DD include hypertrophic, vesicobullous, hypopigmented, cornifying, zosteriform or linear, acute and comedonal subtypes. Comedonal Darier disease (CDD) is characterized by the coexistence of acne-like comedonal lesions with typical Darier hyperkeratotic papules on light-exposed areas. At histopathologic level, CDD differs from classic DD in the prominent follicular involvement and the presence of greatly elongated dermal villi.

Sequence similarities

Belongs to the cation transport ATPase (P-type) (TC 3.A.3) family. Type IIA subfamily.

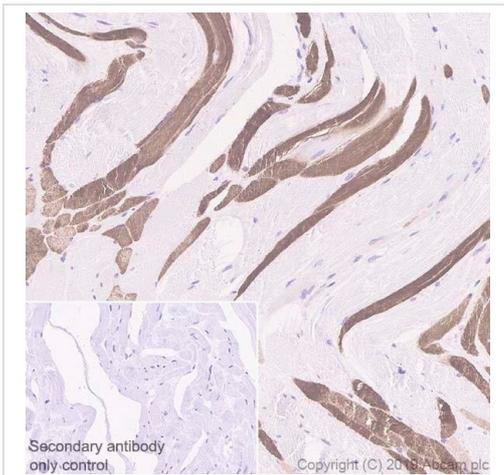
Post-translational modifications

Nitrated under oxidative stress. Nitration on the two tyrosine residues inhibits catalytic activity.

Cellular localization

Endoplasmic reticulum membrane. Sarcoplasmic reticulum membrane.

Images

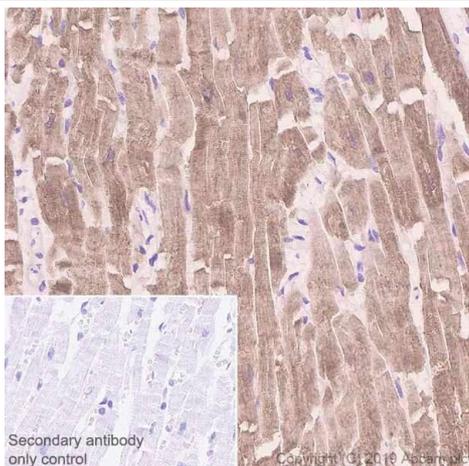


Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue labeling SERCA2 ATPase with ab2817 at 1/4000 dilution, followed by ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Cytoplasmic staining on human skeletal muscle tissue is observed. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, followed by ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SERCA2 ATPase antibody [IID8] (ab2817)

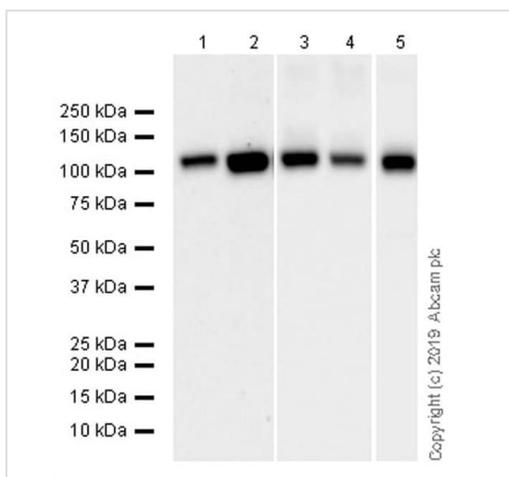


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SERCA2 ATPase antibody [IID8] (ab2817)

Immunohistochemical analysis of paraffin-embedded human cardiac muscle tissue labeling SERCA2 ATPase with ab2817 at 1/4000 dilution, followed by ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Cytoplasmic staining on human cardiac muscle tissue is observed. Counterstained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, followed by ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Western blot - Anti-SERCA2 ATPase antibody [IID8] (ab2817)

All lanes : Anti-SERCA2 ATPase antibody [IID8] (ab2817) at 1/1000 dilution

Lane 1 : HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate

Lane 2 : HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate

Lane 3 : A549 (human lung carcinoma epithelial cell), whole cell lysate

Lane 4 : A673 (human muscle Ewing's Sarcoma), whole cell lysate

Lane 5 : Human skeletal muscle

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/100000 dilution

Observed band size: 110 kDa

Blocking/Dilution buffer: 5% NFDm/TBST.

Exposure times: Lanes 1-2: 92 seconds; Lanes 3-4: 10 seconds;
Lane 5: 3 seconds.

Samples are non-boiled as boiling may cause protein aggregates.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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