



SERCA2 Rabbit mAb

Catalog No	YP-rAb-17356
Isotype	IgG
Reactivity	Human,Mouse,Rat
Applications	WB,IHC,IF,ELISA
Gene Name	ATP2A2
Protein Name	Sarcoplasmic/endoplasmic reticulum calcium ATPase 2
Purification Process	Protein A
Specificity	Endogenous
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Source	Monoclonal, Rabbit,IgG
Dilution	IHC 1:200-1:1000; WB 1:2000-1:10000; IF 1:200-1:1000; ELISA 1:5000-1:20000; Note: For IHC, we suggest antigen retrieval with TE buffer pH 9.0
Concentration	0.5 mg/ml
Purity	≥90%
Storage Stability	-15° C to -25° C/1 year(Do not lower than -25° C)
Synonyms	ATP2A2 ; ATP2B ; Sarcoplasmic/endoplasmic reticulum calcium ATPase 2 ; SERCA2 ; SR Ca ; 2+ ; -ATPase 2 ; Calcium pump 2 ; Calcium-transporting ATPase sarcoplasmic reticulum type, slow twitch skeletal muscle isoform ; Endoplasmic reticulum class 1/2 Ca ; 2+ ; ATPase
Observed Band	140kD
Calculated Molecular Weight	115kD
Cell Pathway	Endoplasmic reticulum membrane ; Multi-pass membrane protein . Sarcoplasmic reticulum membrane ; Multi-pass membrane protein .
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.
Function	Alternative products:SERCA2 transcripts differ only in their 3'-UTR region and are expressed in a tissue-specific manner,Catalytic activity:ATP + H(2)O +

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Ca(2+)(Cis) = ADP + phosphate + Ca(2+)(Trans).,Disease: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.,Disease: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 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.,enzyme regulation: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.,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 SERCA2A is involved in the regulation of the contraction/relaxation cycle.,PTM:Nitrated under oxidative stress. Nitration on the two tyrosine residues inhibits catalytic activity.,similarity:Belongs to the cation transport ATPase (P-type) family.,similarity:Belongs to the cation transport ATPase (P-type) family. Type IIA subfamily.,subunit:Associated with phospholamban (PLN).,tissue specificity:Isoform SERCA2A is highly expressed in heart and slow twitch skeletal muscle. Isoform SERCA2B is widely expressed, in smooth muscle and nonmuscle tissues such as in adult skin epidermis.,

Background

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 into the sarcoplasmic reticulum lumen, and is involved in regulation of the contraction/relaxation cycle. Mutations in this gene cause Darier-White disease, also known as keratosis follicularis, an autosomal dominant skin disorder characterized by loss of adhesion between epidermal cells and abnormal keratinization. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Oct 2008],

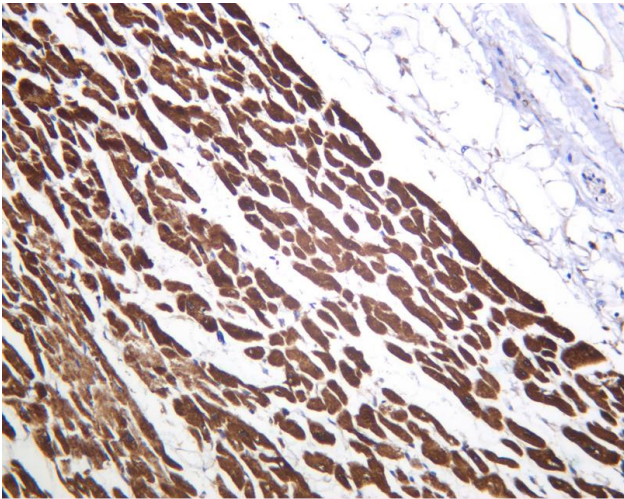
matters needing attention

Avoid repeated freezing and thawing!

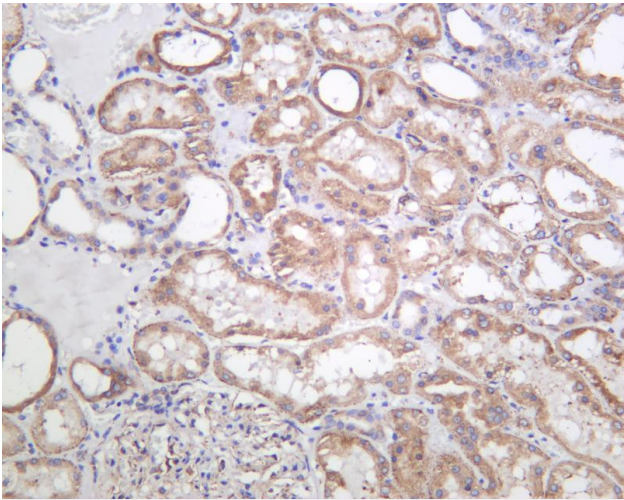
Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

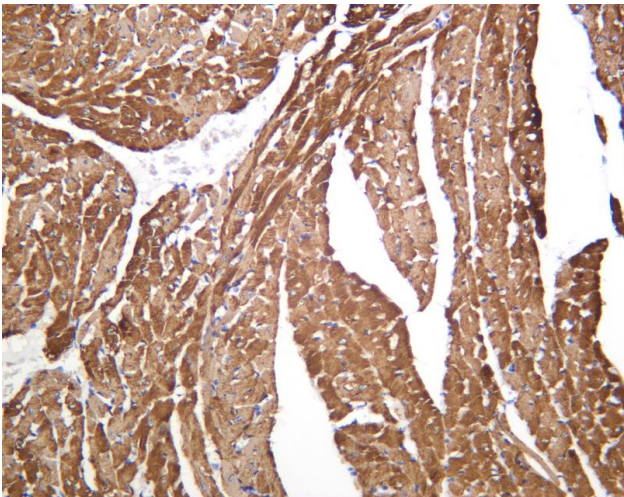




Human cardiac muscle was stained with anti-SERCA2 Rabbit antibody



Human kidney was stained with anti-SERCA2 Rabbit antibody



Mouse cardiac muscle was stained with anti-SERCA2 Rabbit antibody

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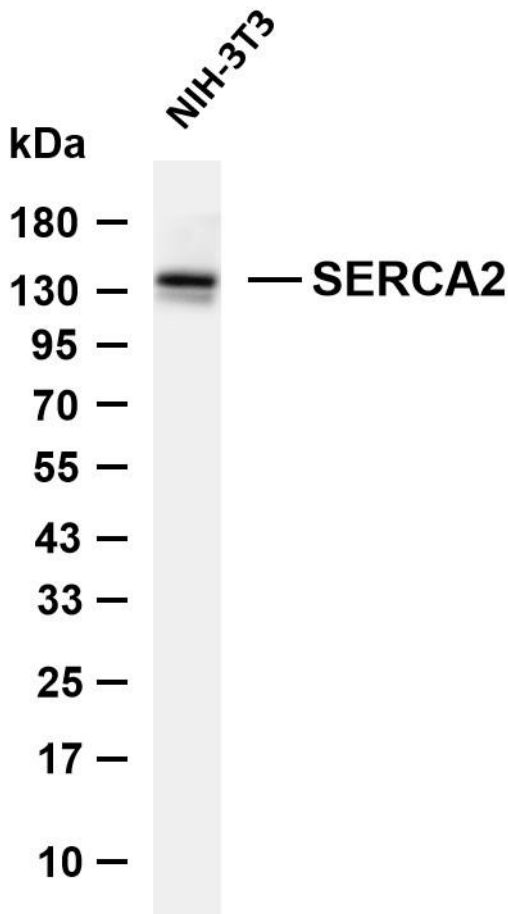
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Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-SERCA2 antibody. The HRP-conjugated Goat anti-Rabbit IgG (H + L) antibody was used to detect the antibody. Lane 1: NIH-3T3 Predicted band size: 115kDa Observed band size: 140kDa

