

SERCA2 (PT1034R) PT® Rabbit mAb

CatalogNo: YM8823 **Recombinant** 

Key Features

Host Species

- Rabbit

Reactivity

- Human, Mouse, Rat

Applications

- WB, IHC, IF, IP, ELISA

MW

- 115kD (Calculated)
140kD (Observed)

Isotype

- IgG, Kappa

Recommended Dilution Ratios

IHC 1:200-1:1000

WB 1:2000-1:10000

IF 1:200-1:1000

ELISA 1:5000-1:20000

IP 1:50-1:200

Storage

Storage* -15°C to -25°C/1 year (Do not lower than -25°C)

Formulation PBS, 50% glycerol, 0.05% Proclin 300, 0.05% BSA

Basic Information

Clonality Monoclonal

Clone Number PT1034R

Immunogen Information

Specificity Endogenous

| Target Information

Gene name ATP2A2

Protein Name Sarcoplasmic/endoplasmic reticulum calcium ATPase 2

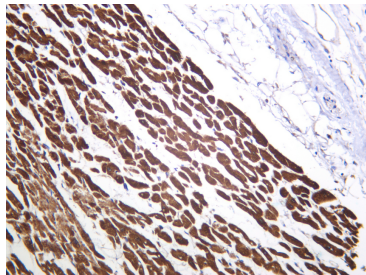
Organism	Gene ID	UniProt ID
Human	488 ;	P16615 ;
Mouse	11938 ;	O55143 ;
Rat	29693 ;	P11507 ;

Cellular Localization Endoplasmic reticulum membrane ; Multi-pass membrane protein . Sarcoplasmic reticulum membrane ; Multi-pass membrane protein .

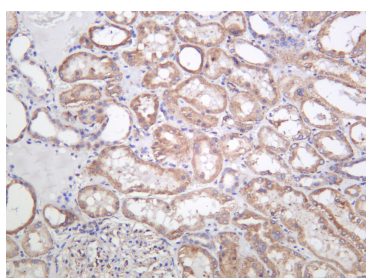
Tissue specificity Isoform 1 is widely expressed in smooth muscle and nonmuscle tissues such as in adult skin epidermis, with highest expression in liver, pancreas and lung, and intermediate expression in brain, kidney and placenta. Also expressed at lower levels in heart and skeletal muscle. Isoforms 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 + 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.,

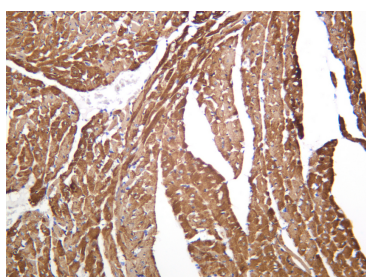
Validation Data



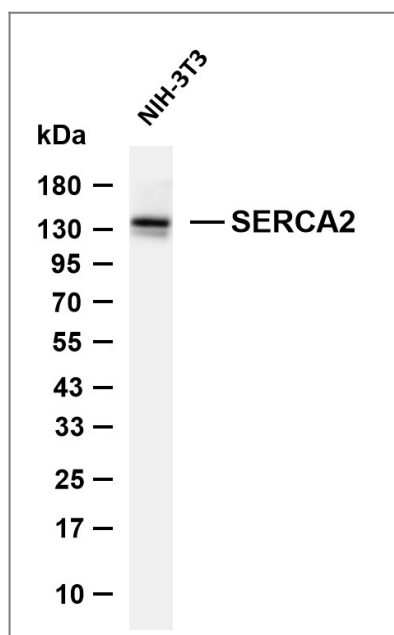
Human cardiac muscle was stained with anti-SERCA2 (PT1034R) Rabbit antibody



Human kidney was stained with anti-SERCA2 (PT1034R) Rabbit antibody



Mouse cardiac muscle was stained with anti-SERCA2 (PT1034R) Rabbit antibody



Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-SERCA2 (PT1034R) 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

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