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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Product name:</b>     | SERCA2 Rabbit Polyclonal Antibody                                                                                           |
| <b>Cat number:</b>       | ABN17749                                                                                                                    |
| <b>Conjugate:</b>        | Unconjugated                                                                                                                |
| <b>Size:</b>             | 100µL                                                                                                                       |
| <b>Clone:</b>            | Polyclonal                                                                                                                  |
| <b>Concentration:</b>    | 1mg/ml                                                                                                                      |
| <b>Host:</b>             | Rabbit                                                                                                                      |
| <b>Isotype:</b>          | IgG                                                                                                                         |
| <b>Immunogen:</b>        | The antiserum was produced against synthesized peptide derived from the C-terminal region of human ATP2A2. AA range:841-890 |
| <b>Reactivity:</b>       | Human,Mouse,Rat,Chicken                                                                                                     |
| <b>Applications:</b>     | WB 1:500-1:2000,IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:10000-1:20000                                                     |
| <b>Molecular Weight:</b> | 115kDa                                                                                                                      |
| <b>Purification:</b>     | Affinity purification                                                                                                       |
| <b>Form:</b>             | Liquid                                                                                                                      |
| <b>Buffer:</b>           | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.                                          |
| <b>Storage:</b>          | Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles.                                |

## 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], alternative products: SERCA2 transcripts differ only in their 3'-UTR region and are expressed in a tissue-specific manner, catalytic activity:  $\text{ATP} + \text{H}_2\text{O} + \text{Ca}^{2+}(\text{Cis}) = \text{ADP} + \text{phosphate} + \text{Ca}^{2+}(\text{Trans})$ , 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.,