

Anti-PLN Antibody
Catalog # ABO10635

Specification

Anti-PLN Antibody - Product Information

Application	WB
Primary Accession	P26678
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Cardiac phospholamban(PLN) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-PLN Antibody - Additional Information

Gene ID 5350

Other Names

Cardiac phospholamban, PLB, PLN, PLB

Calculated MW

6109 MW KDa

Application Details

Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization

Sarcoplasmic reticulum membrane; Single-pass membrane protein. Mitochondrion membrane ; Single- pass membrane protein . Endoplasmic reticulum membrane; Single-pass membrane protein.

Tissue Specificity

Heart muscle (at protein level). .

Protein Name

Cardiac phospholamban(PLB)

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the N-terminus of human PLN (2-16aa EKVQYLTRS AIRRAS), identical to the related rat and mouse sequences.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

Anti-PLN Antibody - Protein Information

Name PLN ([HGNC:9080](#))

Synonyms PLB

Function

Reversibly inhibits the activity of ATP2A2/SERCA2 in cardiac sarcoplasmic reticulum by decreasing the apparent affinity of the ATPase for Ca(2+) (PubMed:28890335). Binds preferentially to the ATP- bound E1 conformational form of ATP2A2 which predominates at low Ca(2+) concentrations during the diastolic phase of the cardiac cycle (By similarity). Inhibits ATP2A2 Ca(2+) affinity by disrupting its allosteric activation by ATP (By similarity). Modulates the contractility of the heart muscle in response to physiological stimuli via its effects on ATP2A2. Modulates calcium re-uptake during muscle relaxation and plays an important role in calcium homeostasis in the heart muscle. The degree of ATP2A2 inhibition depends on the oligomeric state of PLN. ATP2A2 inhibition is alleviated by PLN phosphorylation (By similarity). Also inhibits the activity of ATP2A3/SERCA3 (By similarity). Controls intracellular Ca(2+) levels in elongated spermatids and may play a role in germ cell differentiation (By similarity). In the thalamic reticular nucleus of the brain, plays a role in the regulation of sleep patterns and executive functioning (By similarity).

Cellular Location

Endoplasmic reticulum membrane; Single-pass membrane protein. Sarcoplasmic reticulum membrane; Single-pass membrane protein. Mitochondrion membrane {ECO:0000250|UniProtKB:A4IFH6}; Single-pass membrane protein. Membrane {ECO:0000250|UniProtKB:P61014}; Single-pass membrane protein. Note=Colocalizes with HAX1 at the endoplasmic reticulum (PubMed:17241641). Colocalizes with DMPK at the sarcoplasmic reticulum (PubMed:15598648).

Tissue Location

Heart muscle (at protein level).

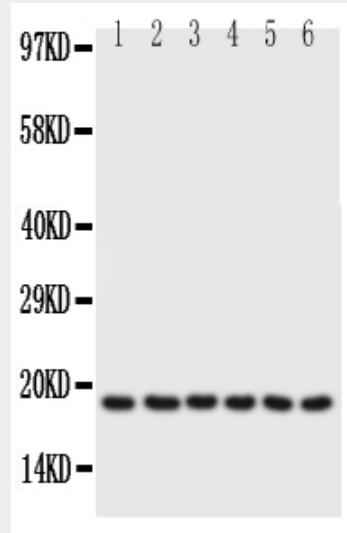
Anti-PLN Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)

- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-PLN Antibody - Images



Anti-PLN antibody, ABO10635, Western blotting All lanes: Anti PLN (ABO10635) at 0.5ug/ml Lane 1: Rat Heart Tissue Lysate at 50ug Lane 2: Rat Heart Tissue Lysate at 50ug Lane 3: CEM Whole Cell Lysate at 40ug Lane 4: MCF-7 Whole Cell Lysate at 40ug Lane 5: HT1080 Whole Cell Lysate at 40ug Lane 6: HELA Whole Cell Lysate at 40ug Predicted bind size: 18KD Observed bind size: 18KD

Anti-PLN Antibody - Background

Phospholamban is a 52 amino acid integral membrane protein that regulates the Ca²⁺ pump in cardiac muscle and skeletal muscle cells. The subsequent activation of the Ca²⁺ pump leads to enhanced muscle relaxation rates, thereby contributing to the inotropic response elicited in heart by beta-agonists. Phospholamban is also expressed in slow-twitch skeletal muscle and some smooth muscle cells. McTiernan et al.(1999) observed that human ventricle and quadriceps displayed high levels of phospholamban transcripts and proteins, with markedly lower expression observed in smooth muscles, while the right atrium also expressed low levels of phospholamban. The structure of the human phospholamban gene closely resembles that reported for chicken, rabbit, rat, and mouse. Comparison of the human to other mammalian phospholamban genes indicated a marked conservation of sequence for at least 217 bp upstream of the transcription start site.