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Phospholamban (PLN, PLB) mAb (clone A1)

Quality Control Certificate of Analysis
Catalogue No.:A010-14
Unit Size: 25 µg
Lot No.: A642214

Background: The majority of calcium required for muscle contraction is mobilised from the Sarcoplasmic Reticulum (SR), to which it has to return to in order to facilitate relaxation. The (Ca^{2+}- Mg^{2+}) ATPase enzyme is responsible for the sequestration of calcium after its release from the SR, and is controlled by another sarcoplasmic reticulum protein called phospholamban (PLB) in cardiac, smooth and slow-twitch skeletal muscle (Drago and Colyer, 1994). The monoclonal antibody (A1) was raised against bovine cardiac PLB (Suzuki and Wang, 1986) and recognises an epitope comprising of residues $_{7}$LTRSAIRRAS$_{16}$ (Morris *et al.*, 1991). The antibody reacts with all forms of PLB: monomer, oligomers, phosphorylated and non-phosphorylated. The antibody stimulates Ca^{2+} pump activity upon binding to PLB, to an extent equivalent to stoichiometric phosphorylation of PLB (Jackson and Colyer, 1996). Manipulation of SERCA2:PLB ratios is a therapeutic strategy for heart failure. Elimination of PLB boosts SR Ca^{2+}-load which can exacerbate pathological outcomes (apoptosis, arrhythmias) when combined with other alterations in SR function.

Description: Affinity Purified Mouse monoclonal antibody (A010-14) to phospholamban.

Immunogen: Bovine cardiac phospholamban. Epitope has been mapped to residues 7-16 (Morris *et al* 1991).

Antibody Isotype: IgG.

Antibody Purity: Protein A affinity purified

Vial Constituents: Freeze dried antibody (25µg) in a solution of 0.1M MOPS, pH 7.0. Contains no preservatives.

Storage Instructions: Freeze dried antibody is stable at 4°C when stored with desiccant. Reconstitute glassy pellet in 25µL of 18 MΩ H_2O. Aliquot and store frozen at -80°C for 1 year. Avoid freeze – thaw cycles.

Tested Applications: WB; recommended dilution 1:5000-1:20000; optimise accordingly.

Specificity: The antibody recognises all forms of phospholamban: monomer, oligomer, phosphorylated and non-phosphorylated. Binding of the antibody to its target epitope is blocked in the presence of a peptide containing the PLB A1 epitope. As Ser-16 is within the epitope, the affinity for PLB and PLB Phospho Ser-16 may differ.

Species Cross Reactivity: Reacts with phospholamban from bovine, canine, ferret, hamster, human, rat and sheep species

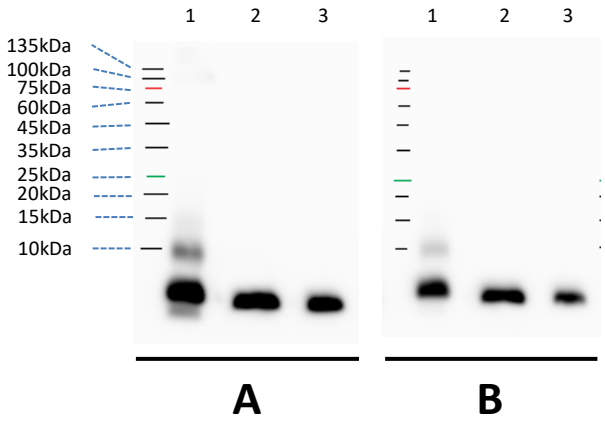

Image: **PLN Monomeric Species Detected Using anti-PLN mAb (clone A1, A010-14, lot 642105)**

Lanes 1: Cardiac Sarcoplasmic Reticulum (CSR) 1µg.
Lanes 2: Rat cardiac myocytes, 10µg
Lanes 3: Rat ventricular tissue, 10µg

Clone A1, A010-14, lot 642105 used at (A) 1:5000 and (B) 1:20000 SDS PAGE on 15% Gels; Blot developed on Syngene G:Box digital imaging system (30s exposure).

Related Products:
PLN phospho Ser-16 antibody (A010-12AP); PLN phospho Thr-17 antibody (A010-13AP); PLN phospho Ser-10 antibody (A010-10AP).

Background References:

• Drago, G. A., and Colyer, J. (1994): *J Biol Chem* **269**, 25073-7.
• Jackson & Colyer (1996): *Biochem. J.* **316**, 201-207.
• Morris *et al*. (1991): *J. Biol. Chem.* **266**, 11270-11275.
• Suzuki & Wang (1986): *J. Biol. Chem.* **261**, 7018-7023.