

Phospholamban (PLN, PLB) mAb (clone A1)

Quality Control Certificate of Analysis

Catalogue No.: A010-14

Unit Size: 25 µg

Lot No.: 642067

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 (Ca²⁺- Mg²⁺) 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 γ LTRSAIRRAS₁₆ (Morris *et al.*, 1991). The antibody reacts with all forms of PLB: monomer, oligomers, phosphorylated and non-phosphorylated. The antibody stimulates Ca²⁺ 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 Ca²⁺-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.

Vial Constituents: Lyophilised (25 µg) from a solution of PBS, pH 7.2. Contains no preservatives.

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

Storage Instructions: Lyophilised antibody is stable at 4°C when stored with desiccant. Reconstitute lyophilised powder in 147 µL of 18 MΩ H₂O, aliquot and store frozen at -80°C for 1 year. Avoid freeze – thaw cycles.

Antibody Isotype: IgG.

Tested Applications: WB 1:2000

Antibody Purity: Protein A affinity purified

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

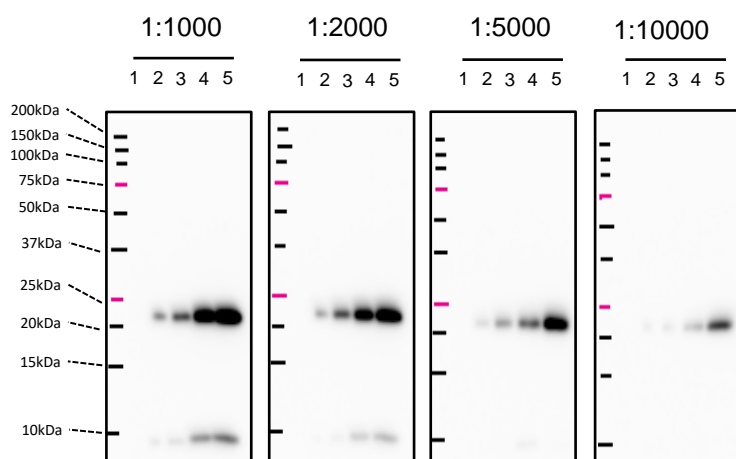


Image: PLN pentamer and monomer detected using anti-PLN mAb (clone A1) in rat ventricular tissue. Lanes 1-5 in each panel loaded with 1, 5, 10, 20, 30µg of total protein respectively and PLN detected using the range of antibody (A1, A010-14, lot 642067) dilutions shown. SDS PAGE on 15% Gels; Blot developed on Syngene G:Box digital imaging system (15m 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.