

Phospholamban (PLN, PLB) (pSer16) pAb

Quality Control Certificate of Analysis

Catalogue No.: A010-12AP

Unit Size: 50 µl

Lot No.: 0812-04

Background: Phospholamban (PLB/PLN) is a small transmembrane protein which plays an important role in controlling the activity of the sarcoplasmic reticulum ATPase (SERCA2a) of cardiac muscle during calcium sequestration (Drago and Colyer, 1994). Phospholamban is phosphorylated on separate amino acid residues by cAMP-dependent, and cGMP-dependent (Ser-16, Simmerman *et al.*, 1986) and Ca²⁺/CaM-dependent (Thr-17, Simmerman *et al.*, 1986) protein kinases in response to β-adrenergic stimulation (Wegener *et al.*, 1989). Akt has also been shown to phosphorylate Thr-17. The result is an increased calcium pump activity which reduces the time course of the calcium transient, increases the calcium load in the sarcoplasmic reticulum, and consequently, produces a larger calcium transient at the next action potential (Sham *et al.*, 1991). However, alteration in this homeostatic interaction has been shown to result in heart failure (MacLennan and Kranias, 2003).

Description: Lyophilised affinity purified **Rabbit** polyclonal antibody (A010-12AP) specific for Ser-16 phosphorylated forms of PLB (Drago & Colyer, 1994).

Immunogen: Phosphopeptide comprising residues 9-19-Y (residues R₉SAIRRAS(PO₃H₂)TIE₁₉Y) conjugated to KLH.

Antibody Isotype: IgG.

Antibody Purity: Protein A Affinity Purified.

Specificity: The antibody recognises mono and oligomeric phospholamban when phosphorylated on serine-16 by PKA. Binding of the antibody to its target epitope is blocked in the presence of a phosphopeptide containing the PLB Phospho Ser-16 epitope. Antibody affinity is reduced in circumstances of dual phosphorylation of Ser-16 and Thr-17.

Species Cross Reactivity: Reacts with Phospho Ser-16 of phospholamban from cow, dog, ferret, hamster, human, rat and sheep.

Vial Constituents: Lyophilised affinity purified A010-12AP Ab (50 µl) in 0.1M Tris-citrate pH 7.4 with 20%v/v stabiliser solution.

Storage Instructions: Lyophilised antibody is stable at 4°C when stored with desiccant. Reconstitute lyophilised powder in 50 µl of 18 MΩ H₂O, aliquot and store frozen at -80°C for 1 year. Avoid freeze - thaw cycles.

Tested Applications: WB 1:5000, IHC 1:200

PO₃H₂ Specific

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| Epitope | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
|---------|----|----|----|----|----|----|----|----|----|----|----|---|
| Human | R | S | A | I | R | R | A | S | T | I | E | Y |
| Mouse | R | S | A | I | R | R | A | S | T | I | E | |
| Rat | R | S | A | I | R | R | A | S | T | I | E | |
| Rabbit | R | S | A | I | R | R | A | S | T | I | E | |
| Chicken | R | S | A | L | R | R | A | S | T | I | E | |
| Xenopus | R | S | A | M | R | R | A | S | N | I | E | |
| Danio | R | A | A | I | R | R | A | S | T | M | E | |

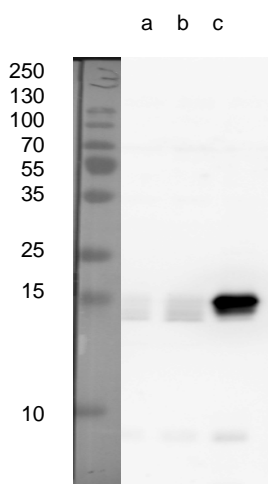


Image: Ser-16-phosphorylated PLN detected in canine cardiac SR 4µg SR in dephos (a), CaMKII phos (b), PKA phos (c) state. SDS-PAGE on 15% gel, blotted with A010-12AP lot 0812-04, 1:5000 dilution, 30 sec exposure.

Related Products:

PLB Phospho Ser-16 epitope peptide (P010-12); PLB Phospho Thr-17 Antibody (A010-13AP); PLB A1 Antibody (A010-14).

Background References:

- Drago, G. A., and Colyer, J. (1994) J Biol Chem 269, 25073-25077
- MacLennan, D. H., and Kranias, E. G. (2003) Nat Rev Mol Cell Biol 4, 566-577
- Sham, J. S., Jones, L. R., and Morad, M. (1991) Am J Physiol 261, H1344-1349
- Simmerman, H. K., Collins, J. H., Theibert, J. L., Wegener, A. D., and Jones, L. R. (1986) J Biol Chem 261, 13333-13341
- Wegener, A. D., Simmerman, H. K., Lindemann, J. P., and Jones, L. R. (1989) J Biol Chem 264, 11468-11474