

Phospholamban (PLN, PLB) (pThr17) pAb

Quality Control Certificate of Analysis

Catalogue No.: A010-13AP

Unit Size: 100 µg

Lot No: 642119

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: Affinity purified **Rabbit** polyclonal antibody (A010-13AP) to phospholamban phospho Thr-17.

Immunogen: Synthetic peptide (R₉SAIRRAST(PO₃H₂)IEY₂₀) corresponding to amino acids surrounding the phosphorylated threonine residue at position 17 of phospholamban, which was conjugated to keyhole limpet hemocyanin (KLH).

Antibody Isotype: IgG.

Antibody Purity: Protein G affinity purified. Eluted in Glycine buffer pH2.8, neutralised with Tris-base. Stabiliser added to 20%v/v

Specificity: The antibody recognises mono and oligomeric phospholamban when phosphorylated at threonine-17. Binding of the antibody to its target epitope is blocked in the presence of a phosphopeptide containing the PLB Phospho Thr-17 epitope.

Species Cross Reactivity: Reacts with Phospho Thr-17 of phospholamban from bovine, canine, ferret, hamster, human, rat and sheep species.

Vial Constituents: Lyophilised antibody (100 µg) in Tris neutralised Glycine pH 7.0 with stabilisers 20%v/v.

Storage Instructions: Lyophilised antibody is stable at 4°C when stored with desiccant. Reconstitute lyophilised powder in 100 µl of 18 MΩ H₂O, aliquot and store frozen at -80°C for 1 year. Avoid freeze – thaw cycles.

Tested Applications: **WB, recommended dil. 1:1000-1:2000.** Not yet tested in other applications, therefore, optimal dilutions/concentrations should be determined by the user.

	PO ₃ H ₂ Specific											
	10									20		
Epitope	R	S	A	I	R	R	A	S	T	I	E	Y
Human	R	S	A	I	R	R	A	S	T	I	E	E
Mouse	R	S	A	I	R	R	A	S	T	I	E	E
Rat	R	S	A	I	R	R	A	S	T	I	E	E
Rabbit	R	S	A	I	R	R	A	S	T	I	E	E
Chicken	R	S	A	L	R	R	A	S	T	I	E	E
Xenopus	R	S	A	M	R	R	A	S	T	I	E	E
Danio	R	A	A	I	R	R	A	S	T	I	E	E

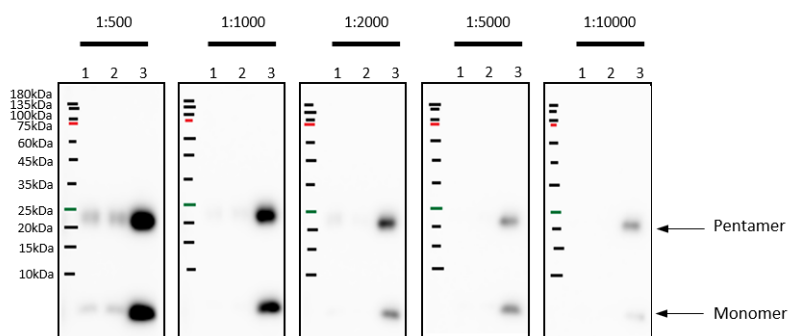


Image: **Detection of Threonine-17 phosphorylated PLN Species Using anti-PLN pThr-17 pAb (A010-13AP, lot 642119)**

Canine cardiac sarcoplasmic reticulum (2ug) was phosphorylated for 5 minutes using Calmodulin and ATP-γ-S; Ln 1: Control, minus ATP-γ-S and Calmodulin; Ln 2: Control minus ATP-γ-S; Ln 3: plus ATP-γ-S (0.2mM) and Calmodulin (0.04mg/mL).

A010-13AP, lot 642119 used at dilutions shown in image

SDS PAGE on 15% Gels; Blot developed on Syngene G:Box digital imaging system (1m exposure).

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

Background References:

- Drago, G. A., and Colyer, J. (1994) J Biol Chem 269, 25073-25077
- Gao, M. H., Tang, T., Guo, T., Miyanojara, A., Yajima, T., Pestonjamas, K., Feramisco, J. R., Hammond, H. K. (2008) J Biol Chem 283.
- 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