Phospholamban (PLN, PLB) (pSer16) pAb serum

Quality Control Certificate of Analysis
Catalogue No.:A010-12
Unit Size: 25 µL
Lot No: 642122

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 Ca^{2+}/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 **Rabbit** polyclonal anti-serum (A010-12) containing IgG antibody specific for Ser-16 phosphorylated forms of PLB (Drago & Colyer, 1994).

Immunogen: Phosphopeptide comprising residues 9-19-Y (residues R_9SAIRRAS(PO_3H_2)TIE_{19}Y) conjugated to KLH.

Antibody Isotype: IgG.

Antibody Purity: Raw Serum.

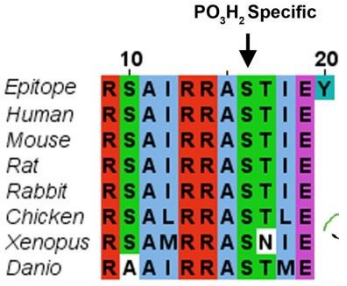
Specificity: The antibody recognises mono and oligomeric phospholamban when phosphorylated on serine-16 by PKA. Binding of the antibody to its target epitope is blocked in the presence of a phosphopeptide containing the PLB Phospho Ser-16 epitope. Antibody affinity is reduced in circumstances of dual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

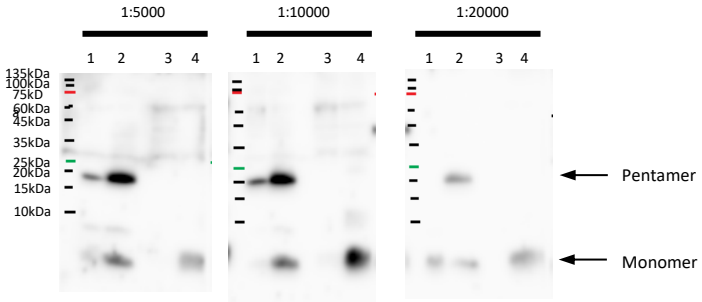
Species Cross Reactivity: Reacts with Phospho Ser-16 of PLB from Human, mouse, rat, rabbit, chicken, ferret, hamster and sheep.

Vial Constituents: Lyophilised A010-12 Rabbit anti-serum (25 µl)

Storage Instructions: Lyophilised antibody is stable at 4 °C when stored with desiccant. Reconstitute lyophilised powder in 25 µl of 18 MΩ H_2O, aliquot and store frozen at -80 °C for 1 year. Avoid freeze - thaw cycles.

Tested Applications: **WB 1:5000**, ELISA and IHC microscopy





Detection of Serine-16 phosphorylated PLN Species Using anti-PLN pSer-16 pAb (A010-12, lot 642122)

Canine cardiac sarcoplasmic reticulum (CSR, 5µg, lanes 1 and 2) and Rat Heart Homogenate (RHH, 10µg, lanes 3 and 4) were phosphorylated for 5 minutes in the presence of purified catalytic subunit of PKA and ATP-**γ**-S; Ln 1 and 3: Control, minus ATP-**γ**-S and cPKA; Ln 2 and 4: plus ATP-**γ**-S (0.2mM) and cPKA (5%v/v).

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

Related Products:
PLB Phospho Ser-16 epitope peptide (P010-12AP); 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