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A010-12 anti-phospholamban phospho-Ser16 20 μ l

Background: Phospholamban (PLB) is an inhibitor of the SR Ca²⁺-pump in cardiac, slow-twitch and smooth muscle. Phosphorylation of PLB on either Ser-16 (cAMP-dependent) or Thr-17 (Ca²⁺/CaM-dependent) prevents its interaction with the Ca²⁺-pump, and thus stimulates pump activity (Jackson & Colyer, 1996). This results in an acceleration of muscle relaxation, an enhancement in the Ca²⁺-content of the SR, and the release of more Ca²⁺ in subsequent contractions. These effects alter muscle contractility substantially, making phospholamban one of the key control points in cardiac contraction.

Description: Lyophilised polyclonal anti-serum containing IgG antibody 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.

Specificity and Species Cross Reactivity: The antibody recognises phospholamban in all mammalian species, when phosphorylated on Ser-16. Affinity for PLB phosphorylated at both Ser-16 and Thr-17 is reduced compared to Ser-16 alone.

Applications: ELISA, Western blot 1:5000; Sufficient for 100ml Western blotting at a working dilution of 1:5000.

Storage: Store antibody desiccated at 4C when dry, and frozen (-20C or -80C) in small aliquots when reconstituted with 20 μ l deionised water.

Epitope sequence alignment PLB (9-19Y)

| | |
|---------|-----------------------|
| Epitope | RSAIRRA S TIEY |
| Human | RSAIRRASTIE |
| Bovine | RSAIRRASTIE |
| Dog | RSAIRRASTIE |
| Mouse | RSAIRRASTIE |
| Pig | RSAIRRASTIE |
| Rabbit | RSAIRRASTIE |
| Rat | RSAIRRASTIE |
| Chick | RSAL L RRASTIE |

references:

Drago, G.A., & Colyer, J. (1994) *J. Biol. Chem.* 269, 25073-25077.
Jackson, W.A. & Colyer, J. (1996) *Biochem. J.* 316, 201-207
Morris, G.L. et al. (1991) *J. Biol. Chem.* 266, 11270-11275.

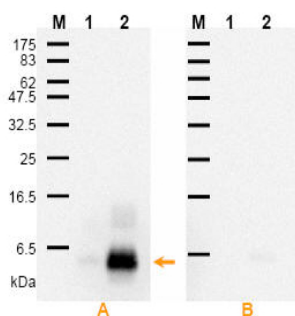


Figure 1: Detection of Ser-16 phosphorylated PLB in rat cardiac SR (A) 6 μ g canine cardiac SR was incubated with PKA (30C, 1min) in absence (lane 1) and presence (lane 2) of MgATP. Samples were boiled (5min) and electrophoresed in 15% SDS-PAGE gels and transferred to PVDF. Blots were stained with anti-phospholamban phospho-Ser16 (A010-12, 1:5000) in the absence (panel A) and presence (panel B) of 1 μ M epitope peptide (P010-12). Immunoreactive proteins were detected using peroxidase based chemiluminescence.