

Ryanodine Receptor 2 (RYR2) (dephoSer2808) pAb serum

Quality Control Certificate of Analysis

Catalogue No.: A010-35AP

Unit Size: 100 µl

Lot No.: 642030

Background: The ryanodine receptor (RyR2) is a Ca²⁺ channel of cardiac muscle that plays a central role in EC coupling. The binding of Ca²⁺ to RyR2 opens the channel and Ca²⁺ stored in the SR moves through the channel into the cytosol to initiate muscle contraction (Bers, 2002). Abnormal structure and function of ryanodine receptors has been reported in failing hearts, with Ser-2809 phosphorylation appearing elevated in clinical situations which may contribute to the abnormal Ca²⁺ handling characteristics of cardiac muscle in these conditions (Wehrens and Marks, 2003). Serine-2809 can be phosphorylated by PKA or CaMKII (Rodriguez *et al.*, 2003), which is coincident with significant change in RyR2 channel function typified by an increased open probability (Witcher *et al.*, 1991; Valdivia *et al.*, 1995; Marx *et al.*, 2000), the abrogation of the inhibitory effects of CaM (Witcher *et al.*, 1991) and Mg²⁺ (Hain *et al.*, 1995), dissociation of regulatory factors, expression of subconductance states and the expression of channel activity at diastolic Ca²⁺ concentrations (Marx *et al.*, 2000). This antibody recognises Dephosphorylated Ser-2808 (human sequence) or Ser-2809 from rabbit.

Description: Affinity purified Rabbit polyclonal antibody (A010-35) to dephosphorylated ryanodine receptor Ser-2809.

Immunogen: Synthetic peptide (Y₂₈₀₂NRTRRISQT₂₈₁₁) corresponding to amino acids surrounding the dephosphorylated serine residue at position 2808 of RyR2, which was conjugated to keyhole limpet hemocyanin (KLH) by carbodiimide cross linkage.

Antibody Isotype: IgG.

Antibody Purity: Protein A Affinity Purified.

Specificity: The antibody recognises dephosphorylated Serine-2808 of the ryanodine receptor. Binding of the antibody to its target epitope is blocked in the presence of a phosphopeptide containing the dephospho Ser-2808 epitope.

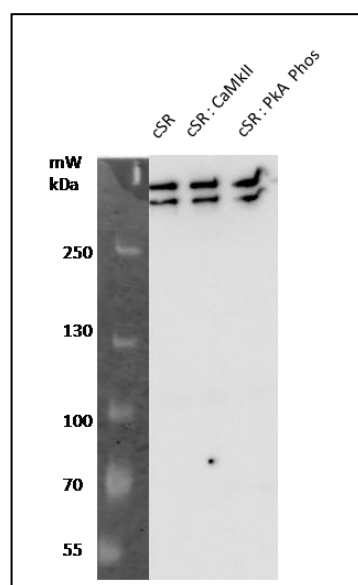
Species Cross Reactivity: Reacts with dephos Ser-2808 of phospholamban from canine, rat and sheep species.

Vial Constituents: Lyophilised affinity purified A010-35AP Ab (100 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 100 µl of 18 MΩ H₂O, aliquot and store frozen at -80°C for 1 year. Avoid freeze - thaw cycles.

Tested Applications: WB 1:500. 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	
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	L	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	



Ser-2808 dephospho-RYR2 detection in canine cardiac sarcoplasmic reticulum (SR)

Three 8µg SR samples (dephos, CaMKII phos & PKA phos as labelled) were electrophoresed (7% SDS-PAGE) and western blotted with A010-35AP (lot: 642030) at dilutions 1:500

Related Products: RYR2 pSer-2809 pAb (A010-30AP), RYR2 pSer2814 pAb(A010-31AP), RYR2 pSer2030 pAb(A01032AP).

Background References:

- Bers, D. M. (2002): *Nature* **415**, 198-205.
- Hain, J., Onoue, H., Mayrleitner, M., Fleischer, S., and Schindler, H. (1995): *J Biol Chem* **270**, 2074-81.
- Marx, S. O., Reiken, S., Hisamatsu, Y., Jayaraman, T., Burkoff, D., Rosemblyt, N., and Marks, A. R. (2000): *Cell* **101**, 365-76.
- Rodriguez, P., Bhogal, M. S., and Colyer, J. (2003): *J Biol Chem* **278**, 38593-600.
- Valdivia, H. H., Kaplan, J. H., Ellis-Davies, G. C., and Lederer, W. J. (1995): *Science* **267**, 1997-2000.
- Wehrens, X. H., and Marks, A. R. (2003): *Trends Biochem Sci* **28**, 671-8.
- Witcher, D. R., Kovacs, R. J., Schulman, H., Cefali, D. C., and Jones, L. R. (1991): *J Biol Chem* **266**, 11144-52.