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A010-35 anti-RYR2 dephospho-Ser2808 50µl

Background: The ryanodine receptor (RyR2) is a Ca^{2+} channel of cardiac muscle that plays a central role in EC coupling. The binding of Ca^{2+} to RyR2 opens the channel and Ca^{2+} 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-2808 phosphorylation appearing elevated in clinical situations which may contribute to the abnormal Ca^{2+} handling characteristics of cardiac muscle in these conditions (Wehrens and Marks, 2003). Ser-2808 can be phosphorylated in vitro by PKA or CaMKII (Rodriguez et al., 2003), which is coincident with significant change in RyR2 channel function typified by an increased open probability (Carter et al., 2006; 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 Mg^{2+} (Hain et al., 1995), dissociation of regulatory factors, expression of subconductance states and the expression of channel activity at diastolic Ca^{2+} concentrations (Marx et al., 2000).

Description: Lyophilised rabbit polyclonal serum containing IgG antibody specific to RyR2 dephospho-Ser2808. Standard pack of 50µl is sufficient for 250ml Western blotting at a working dilution of 1:5000.

Immunogen: Synthetic peptide (YNRTRRISQT₂₈₁₀) corresponding to amino acids surrounding the serine residue at position 2808 of RYR2 (human) that can be phosphorylated by PKA or CaMKII. **Sequence corresponds exactly to Ser-2809 in rabbit.**

Specificity and Species Cross Reactivity: The antibody recognises dephosphorylated serine 2808 of the ryanodine receptor and binding is blocked in the presence of a peptide containing the dephospho-Ser2808 epitope. The antibody reacts with dephospho-Ser2808 of ryanodine receptor from human, rat, mouse, rabbit, canine, rat and sheep species.

Applications: Western blot (1:5000 dilution), Immunofluorescence microscopy (1:100)

Storage: Store antibody desiccated at 4C when dry, and frozen (-20C or -80C) in small aliquots when reconstituted with 50µl deionised water.

Epitope sequence alignment RYR2 (2801-2810)

Epitope	YNRTRRISQT
Human Ser-2808	YNRTRRISQT
Mouse Ser-2808	YNRTRRISQT
RabbitSer-2809	YNRTRRISQT
Rat Ser-2808	YNRTRRISQT

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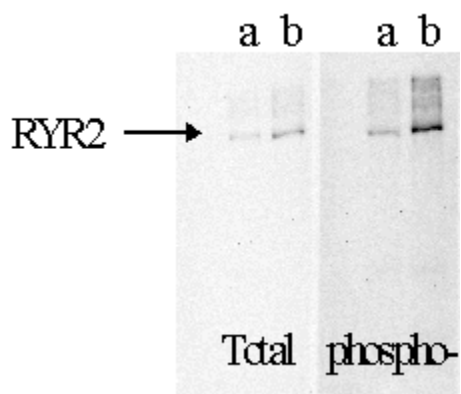


Figure 1: Detection of RYR2 phosphorylated at Ser2808 in rat cardiac SR (Cardiac SR vesicles were phosphorylated by CaMKII for 1 min at 37C (sample b). Control vesicles were incubated without kinase or ATP (a). 10µg protein was separated by 6% SDS-PAGE electrophoresis and transferred to PVDF membrane. Total RYR2 was detected with antibody 34C (Total), Ser-2808 phosphoylated RYR2 was detected with anti-RYR2 phospho-Ser2808 (A010-30: 1:5000) detected with peroxidise based chemiluminescence.