

Ryanodine Receptor 2 (RYR2) (pSer2808) pAb serum

Quality Control Certificate of Analysis

Catalogue No.: A010-30

Unit Size: 50 µl

Lot No: 0212-03

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-2808 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). 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 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). Serine-2808 in human RyR2 equates to Ser-2809 in rabbit RyR2.

Description Lyophilised **Rabbit** polyclonal serum (A010-30) containing IgG antibody specific to RyR2 Phospho Ser-2808

Immunogen: Synthetic peptide (YNRTRRIS(PO₃H₂)QT₂₈₁₀) conjugated to keyhole limpet haemocyanin

Antibody Isotype: IgG.

Antibody Purity: Raw Serum.

Specificity: The antibody recognises phosphorylated Serine-2808 of the ryanodine receptor and binding is blocked in the presence of a peptide containing the Phospho Ser-2808 epitope.

Species Cross Reactivity Human, mouse, rat, rabbit, dog, sheep

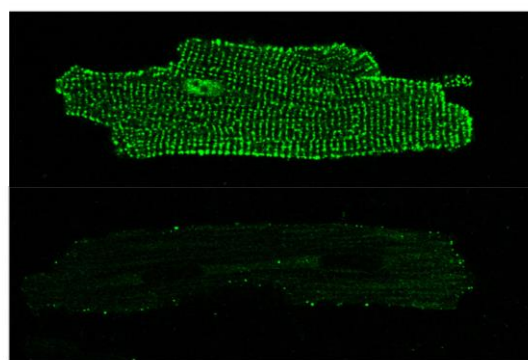
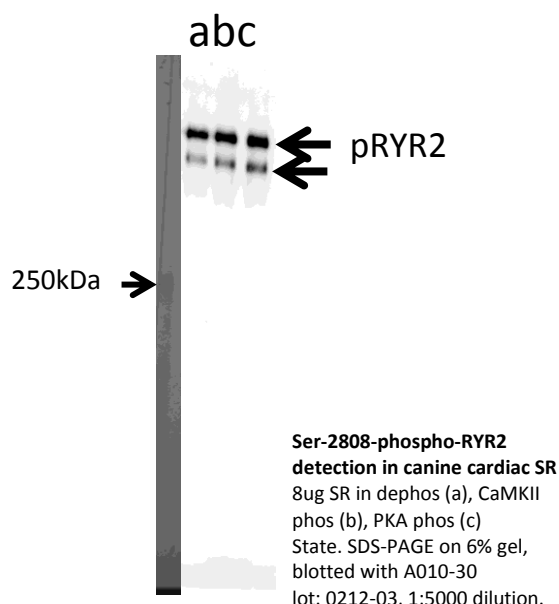
Vial Constituents: Lyophilised A010-30 Rabbit anti-serum (50 µl)

Storage Instructions: Lyophilised antibody is stable at 4°C when stored with desiccant. Reconstitute lyophilised powder in 50 µl of 18 MΩ H₂O, aliquot and store frozen at -80°C for 1 year. Avoid freeze - thaw cycles.

Tested Applications:

WB 1:5000, IHC 1:100, ELISA

	PO ₃ H ₂ Specific											
	2800					2810						
Epitope	-	Y	N	R	T	R	R	I	S	Q	T	-
Human	L	Y	N	R	T	R	R	I	S	Q	T	S
Mouse	L	Y	N	R	T	R	R	I	S	Q	T	S
Rat	L	Y	N	R	T	R	R	I	S	Q	T	S
Rabbit	L	Y	N	R	T	R	R	I	S	Q	T	S
Danio	L	H	N	R	T	R	R	I	S	L	S	S



+ 3 µM epitope peptide

IHC Microscopy using 1:100 RyR2 Phospho Serine-2808 anti-serum (A010-30) Rat cardiac myocytes subjected to 0.5Hz electrical stimulation and a 5 minute 100nM isoprenaline exposure were fixed in 4% formaldehyde for 30min and permeabilised in 0.1% Triton X-100 in PBS. Cells were then blocked with donkey serum, incubated with 1:100 (A010-30) for 1 hour, washed 3 times in PBS and incubated with Alexa Fluor donkey anti-rabbit IgG, 1:500 for 2 hours. Finally, cells were washed (3xPBS) and mounted on a slide and imaged using confocal microscopy

Related Products:

A010-31 RYR2 Phospho Ser-2814); A010-32 RYR2 Phospho Ser-2030, A010-35 RYR Dephospho Ser-2808

Background References:

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- 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., Burkhoff, D., Rosemblyt, N., and Marks, A. R. (2000) *Cell* 101, 365-76.
- Rodríguez, 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.
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- Witcher, D. R., Kovacs, R. J., Schulman, H., Cefali, D. C., and Jones, L. R. (1991) *J Biol Chem* 266, 11144-52.