

Ryanodine Receptor 2 (RYR2) (pSer2808) pAb

Quality Control Certificate of Analysis
Catalogue No.: A010-30
Unit Size: 50µl
lot: A642221

This product was prepared in Oct 2023 using serum from rabbit 9396. All previous batches of this product were manufactured in a different rabbit.

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

Description: Lyophilised Rabbit polyclonal IgG antibody (A010-30) specific to RyR2 Phospho Ser-2808 (Ser-2809 in rabbit RyR2 sequence).

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

Antibody Purity: serum.

Species Cross Reactivity: Dog, rat, sheep

Vial Constituents: Lyophilised serum (A010-30) pAb (50 µl).

Specificity: Antibody recognises phosphorylated serine 2808 of the ryanodine receptor and binding is blocked in the presence of a peptide containing the Phosphor Ser-2808 epitope. Recognises Ser-2808 phosphorylated RYR2 exclusively, and will not react with dephosphorylated RYR2.

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. Not yet tested in other applications, therefore, optimal dilutions/concentrations should be determined by the user.

		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	

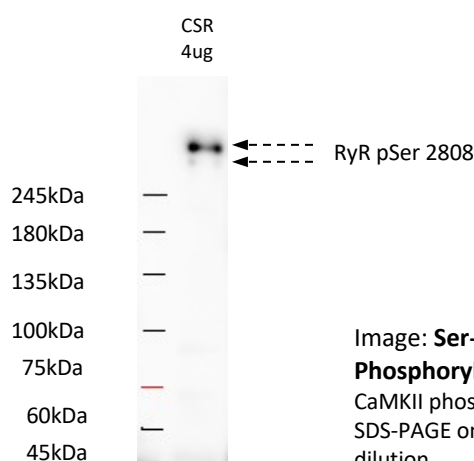


Image: **Ser-2808-phospho-RYR2 detection in CAMKII Phosphorylated canine cardiac SR**

CaMKII phosphorylated CSR (4ug) protein was separated by SDS-PAGE on 6% gel, blotted with A010-30 serum lot: 642102, 1:5000 dilution.

Developed on Syngene G:Box digital imaging system (3m exposure).

Related Products: A010-31AP RYR2 Phospho Ser-2814; A010-32AP RYR2 Phospho Ser-2030; A010-35AP RYR2 Dephospho Ser-2808

Background References:

- Bers, D. M. (2002) *Nature* 415, 198-205.
Carter, S., Colyer, J., & Sitsapesan, R. (2006) *Circ. Res.* 98, 1506-13
Hain, J., Onoue, H., Mayreleiner, M., Fleischer, S., and Schindler, H. (1995) *J Biol Chem* 270, 2074-81.
Marx, S. O., Reiken, S., Hisamatsu, Y., Jayaraman, T., Burkhoff, D., Rosembliit, 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.