

Ryanodine Receptor 2 (RyR2) (pSer2814) pAb serum

Quality Control Certificate of Analysis
Catalogue No.: A010-31
Unit Size: 50µl
Lot No.: A642216

This product was prepared in May 2023 using serum from rabbit C14. All previous batches of this product were manufactured in a different rabbit (D12). The epitope sequence differs (one residue), but the recognition of RyR2 remains the same

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). CaMKII, was able to phosphorylate Ser-2814 of RyR2 (Wehrens et al., 2004) enhancing Ca^{2+} - sensitivity and increasing open probability. Excessive phosphorylation of Ser-2814 leads to atrial fibrillation (Dobrer and wehsens, 2010), arrhythmias and sudden death (Van Oort et al, 2010)

Description: Lyophilised **Rabbit** polyclonal IgG antibody (A010-31) specific to RyR2 Phospho Ser-2814

Immunogen: Synthetic peptide (TSQVS(PO₃H₂)VDAAH₂₈₁₉) corresponding to amino acids surrounding the phosphorylated serine residue at position 2814 of RyR2 (human) conjugated to KLH.

Antibody Isotype: serum containing IgG.

Specificity: Recognises Ser-2814 phosphorylated RyR2 exclusively, and will not react with dephosphorylated RyR2 or RyR2 phosphorylated at other sites.

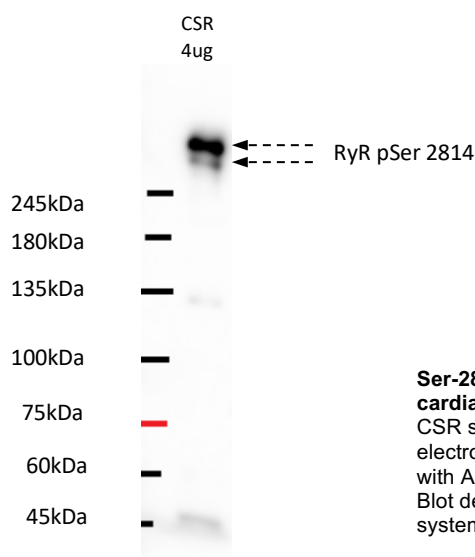
Species Cross Reactivity: Dog, mouse, human: despite minor differences in sequence, this antibody interacts with antigen based on the human and mouse sequence

Vial Constituents: Lyophilised serum A010-31 pAb (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**; not yet tested in other applications, therefore, optimal dilutions/concentrations should be determined by the user. Ab is also effective in ELISA and IHC Microscopy.

	PO ₃ H ₂ Specific											
	2810										2820	
Epitope	-	T	S	Q	V	S	V	D	A	A	H	-
Human		Q	T	S	Q	V	S	V	D	A	A	H
Mouse		Q	T	S	Q	V	S	I	D	A	A	H
Rat		Q	T	S	Q	V	S	I	D	A	A	H
Rabbit		Q	T	S	Q	V	S	V	D	A	A	H
Dog		Q	T	S	Q	V	S	V	D	A	A	H
Danio		L	S	S	Q	R	S	I	E	G	A	H



Ser-2814 phospho-RyR2 detection in 4µg canine cardiac sarcoplasmic reticulum (CSR)

CSR samples (CaMKII phosphorylated) were electrophoresed (6% SDS-PAGE) and western blotted with A010-31 serum (lot: 642101) at dilution of 1:5000. Blot developed on Syngene G:Box digital imaging system (3m exposure).

Related Products: A010-30AP RyR2 Phospho Ser-2808, A010-32AP RyR2 Phospho Ser-2030; A010-35AP RyR Dephospho Ser-2808

Background References:

- Bers, D. M. (2002) Nature 415, 198-205
- Chelu, M. G., Sarma, S., Sood, S., Wang, S., van Oort, R. J., Skapura, D.
- Wehrens, X. H., and Marks, A. R. (2004) Mayo Clin Proc 79, 1367-1371
- Dobrer, D. & Wehrens, X. HT (2010) Trends in Cardiovascular Medicine. 20, 30-34
- Van Oort, R. J et al. (2010) circulation. 122, 2669-79