

Monoclonal Antibody to Ryanodine receptor 2 / RYR2 - Ascites

Alternate names:	RYR-2
Catalog No.:	SM5110
Quantity:	0.1 mg
Concentration:	1 mg/ml
Background:	<p>The ryanodine receptor (RyR) is the channel responsible for the release of calcium from the sarcoplasmic reticulum (SR) in muscle cells and also plays a role in calcium regulation in non-muscle cells. The RyR exists as a homotetramer and is predicted to have a short cytoplasmic C-terminus and 4-10 transmembrane domains; the remainder of the protein, termed the "foot" region is located in the cytoplasm between the T-tubule and the SR. The mammalian RyR is the product of three different genes: RyR-1, which is expressed predominantly in skeletal muscle and areas of the brain, RyR-2, which is expressed predominantly in the heart muscle but also found in the stomach, endothelial cells and diffuse areas of the brain, and RyR-3 which is found in smooth muscle and the brain (striatum, thalamus and hippocampus).</p>
Uniprot ID:	Q8WN72
NCBI:	9615
Host / Isotype:	Mouse / IgG1
Clone:	C3-33
Immunogen:	Canine cardiac ryanodine receptor.
Format:	State: Liquid diluted ascites Buffer System: PBS Preservatives: 0.05% Sodium Azide
Applications:	Flow Cytometry. Immunoprecipitation. Immunocytochemistry: 1/50. Immunofluorescence Immunohistochemistry on Frozen Sections: 1 µg/ml. Immunohistochemistry on Paraffin Embedded Sections: 1 µg/ml, staining of RyR in Rat cardiac tissue with SM5110 results in intense staining of the myofiber, which is consistent with sarcoplasmic reticulum localization. Western Blot: 1 µg/ml, detects a 565 kDa protein representing the ryanodine receptor. In non-mammalian vertebrates, a doublet is seen at 565 kDa representing the alpha and beta isoforms of the receptor. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

- Specificity:** This antibody detects ryanodine receptor 2 (RyR-2) and weakly detects RyR-1 in amphibian, canine, chicken, fish, guinea pig and rat tissues.
- Storage:** Upon receipt, store undiluted (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.
- General Readings:**
1. PNAS Vol 101, No 8, 2241-2246, Feb 2004.
 2. JBC Vol. 279 No. 23, 24794-24802, Jun 2004.
 3. Bidasee KR, Nallani K, Yu Y, Cocklin RR, Zhang Y, Wang M, et al. Chronic diabetes increases advanced glycation end products on cardiac ryanodine receptors/calcium-release channels. *Diabetes*. 2003 Jul;52(7):1825-36. PubMed PMID: 12829653.
 4. Lai FA, Dent M, Wickenden C, Xu L, Kumari G, Misra M, et al. Expression of a cardiac Ca(2+)-release channel isoform in mammalian brain. *Biochem J*. 1992 Dec 1;288 (Pt 2):553-64. PubMed PMID: 1334409.
 5. Sedarat F, Xu L, Moore ED, Tibbits GF. Colocalization of dihydropyridine and ryanodine receptors in neonate rabbit heart using confocal microscopy. *Am J Physiol Heart Circ Physiol*. 2000 Jul;279(1):H202-9. PubMed PMID: 10899057.
 6. Yusufi AN, Cheng J, Thompson MA, Dousa TP, Warner GM, Walker HJ, et al. cADP-ribose/ryanodine channel/Ca2+-release signal transduction pathway in mesangial cells. *Am J Physiol Renal Physiol*. 2001 Jul;281(1):F91-F102. PubMed PMID: 11399650.
 7. Jaehnig EJ, Heidt AB, Greene SB, Cornelissen I, Black BL. Increased susceptibility to isoproterenol-induced cardiac hypertrophy and impaired weight gain in mice lacking the histidine-rich calcium-binding protein. *Mol Cell Biol*. 2006 Dec;26(24):9315-26. Epub 2006 Oct 9. PubMed PMID: 17030629.
 8. *Am J Physiol*. 1992 Aug;263(2 Pt 1):C365-72.
 9. Hirose M, Stuyvers B, Dun W, Ter Keurs H, Boyden PA. Wide long lasting perinuclear Ca2+ release events generated by an interaction between ryanodine and IP3 receptors in canine Purkinje cells. *J Mol Cell Cardiol*. 2008 Aug;45(2):176-84. doi: 10.1016/j.yjmcc.2008.05.008. Epub 2008 May 23. PubMed PMID: 18586264.
 10. Koulen P, Wei J, Madry C, Liu J, Nixon E. Differentially distributed IP3 receptors and Ca2+ signaling in rod bipolar cells. *Invest Ophthalmol Vis Sci*. 2005 Jan;46(1):292-8. PubMed PMID: 15623787.

Pictures: **Figure 1.** Immunolocalization of RyR1 in rat brain hippocampus using SM5110.

