

## Product datasheet for **TA329024**

### Ryanodine Receptor (RYR1) Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)RAENEKDATTEKNKRR, corresponding to amino acid residues 1371-1386 of human Ryanodine Receptor 1. Intracellular, N-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN <sub>3</sub> .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	ryanodine receptor 1
Database Link:	<a href="#">NP_000531</a> <a href="#">Entrez Gene 20190 Mouse</a> <a href="#">Entrez Gene 114207 Rat</a> <a href="#">Entrez Gene 6261 Human</a> <a href="#">P21817</a>



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**Background:**

It is well established that cytosolic calcium (Ca<sup>2+</sup>) acts as a key second messenger in many intracellular pathways including synaptic transmission, muscle contraction, hormonal secretion, cell growth and proliferation.<sup>1,2</sup> The primary intracellular Ca<sup>2+</sup> storage/release organelle in most cells is the endoplasmic reticulum (ER) or the sarcoplasmic reticulum (SR) in striated muscle cells. The ER and SR contain two Ca<sup>2+</sup> release channels families, the Inositol trisphosphate receptors (IP3Rs) and the Ryanodine receptors (RyRs). The Ryanodine receptor family consists of three different isoforms: The skeletal muscle isoform, Ryanodine Receptor type 1 (RyR1); the cardiac muscle isoform, Ryanodine Receptor type 2 (RyR2) and the brain isoform, Ryanodine Receptor type 3 (RyR3). The Ryanodine receptors are homotetrameric proteins generating a Ca<sup>2+</sup> conducting channel. They play a key role in the mechanism of excitation-contraction coupling in striated muscle. Binding of Ryanodine to the Ryanodine Receptor causes two major changes in the channel: a reduction in single-channel conductance and a marked increase in open state probability. The RyR1 is expressed predominantly in skeletal muscles and areas of the brain; the human RyR1 has at least three known alternative spliced variants. Several diseases are attributed to mutations in RyR1 gene: Central Core Disease (CCD), multi-minicore disease (MmD) and Malignant Hyperthermia (MH).

**Synonyms:**

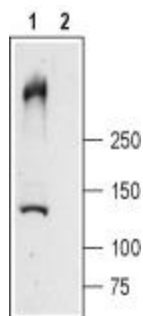
CCO; MHS; MHS1; PPP1R137; RYDR; RYR; RYR-1; SKRR

**Protein Families:**

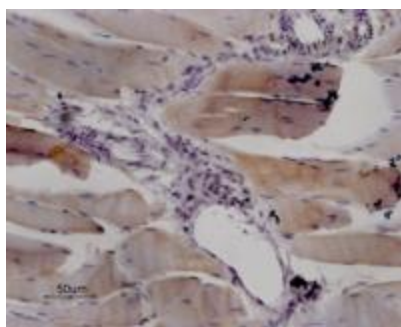
Druggable Genome, Transmembrane

**Protein Pathways:**

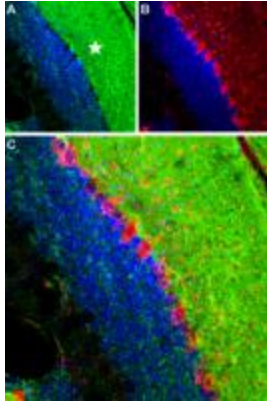
Calcium signaling pathway, Long-term depression

**Product images:**


Western blot analysis of rat skeletal muscle lysates: 1. Anti-Ryanodine Receptor 1 antibody, (1:200). 2. Anti-Ryanodine Receptor 1 antibody, preincubated with the control peptide antigen.



Expression of Ryanodine Receptor 1 in rat skeletal muscle. Immunohistochemical staining of paraffin embedded sections of rat quadriceps using Anti-Ryanodine Receptor 1 antibody, (1:100). Ryanodine Receptor 1 is expressed in fibers of striate muscle. Note that smooth muscle in the arterial walls is negative as well as the surrounding connective tissue. Hematoxylin is used as the counterstain.



IHC staining of mouse cerebellum frozen sections using Anti-Ryanodine Receptor 1 antibody, (1:100), (green). A. The highest expression of Ryanodine Receptor 1 is in the molecular layer (Asterisk). B. In the same section, there is staining for parvalbumin (red), a marker of Purkinje cells. C. Merged image of panels A and B demonstrates that Ryanodine Receptor 1 is localized surrounding the dendritic tree of Purkinje cells. DAPI is used as the counterstain.