

RyR (H-300): sc-13942

BACKGROUND

Dihydropyridine receptor (DHPR) is a surface membrane protein critical for the excitation-contraction coupling of striated muscle. DHPR and the sarcoplasmic reticulum ryanodine receptor (RyR) are two key components of the intracellular junctions, where depolarization of the surface membrane is converted into the release of Ca²⁺ from internal stores. The α 1-subunit of the DHPR contains a cytoplasmic loop which is thought to be involved in the interactions with RyR. Phosphorylation of the DHPR α 1-subunit is also thought to play a role in the functional interaction of DHPR and RyR. Mutation in DHPR α 1 results in excitation-contraction uncoupling, leading to muscular dysgenesis, a complete inactivity in developing skeletal muscles. Cells that do not express RyR also lack excitation-contraction coupling and exhibit a several-fold reduction in Ca²⁺ current density.

REFERENCES

1. Pincon-Raymond, M., et al. 1990. A genetic model for the study of abnormal nerve-muscle interactions at the level of excitation-contraction coupling: the mutation muscular dysgenesis. *J. Physiol.* 84: 82-87.
2. Fan, H., et al. 1995. Binding sites of monoclonal antibodies and dihydropyridine receptor α 1 subunit cytoplasmic II-III loop on skeletal muscle triadin fusion peptides. *Biochemistry* 34: 14893-14901.

SOURCE

RyR (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of RyR of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

RyR (H-300) is recommended for detection of skeletal muscle, cardiac muscle and brain ryanodine receptors of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RyR (H-300) is also recommended for detection of skeletal muscle, cardiac muscle and brain ryanodine receptors in additional species, including bovine and porcine.

Molecular Weight of RyR-1: 550 kDa.

Molecular Weight of RyR-2: 565 kDa.

Molecular Weight of RyR-3: 552 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat heart extract: sc-2393.

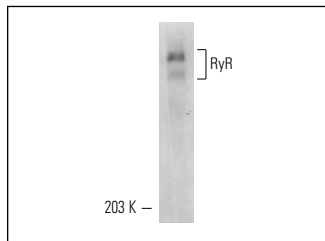
RESEARCH USE

For research use only, not for use in diagnostic procedures.

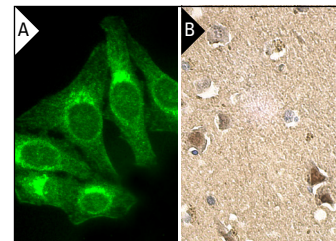
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



RyR (H-300): sc-13942. Western blot analysis of RyR expression in rat heart tissue extract.



RyR (H-300): sc-13942. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing nuclear and cytoplasmic staining of neuronal cells (B).

SELECT PRODUCT CITATIONS

1. Zhang, Q., et al. 2004. Growth hormone promotes Ca²⁺-induced Ca²⁺ release in Insulin-secreting cells by ryanodine receptor tyrosine phosphorylation. *Mol. Endocrinol.* 18: 1658-1669.
2. Soares, S.M., et al. 2005. Role of the second-messenger cyclic-adenosine 5'-diphosphate-ribose on adrenocorticotropin secretion from pituitary cells. *Endocrinology* 146: 2186-2192.
3. Okkenhaug, H., et al. 2006. The human CIC-4 protein, a member of the CLC chloride channel/transporter family, is localized to the endoplasmic reticulum by its N-terminus. *FASEB J.* 20: 2390-2392.
4. Divangahi, M., et al. 2009. Lack of CFTR in skeletal muscle predisposes to muscle wasting and diaphragm muscle pump failure in cystic fibrosis mice. *PLoS Genet.* 5: e1000586.
5. Yue, J., et al. 2009. CD38/cADPR/Ca²⁺ pathway promotes cell proliferation and delays nerve growth factor-induced differentiation in PC12 cells. *J. Biol. Chem.* 284: 29335-29342.
6. Razani, B., et al. 2011. Fatty acid synthase modulates homeostatic responses to myocardial stress. *J. Biol. Chem.* 286: 30949-30961.
7. Yu, P.L., et al. 2012. A novel fluorescent cell membrane-permeable caged cyclic ADP-ribose analogue. *J. Biol. Chem.* 287: 24774-24783.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **RyR (F-1): sc-376507**, our highly recommended monoclonal alternative to RyR (H-300).