

RyR-3 (K-16): sc-21330

BACKGROUND

Dihydropyridine receptor (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 Ca^{2+} from internal stores. The RyR family consists of RyR-1, RyR-2 and RyR-3 which are characterized respectively as skeletal muscle, cardiac and brain ryanodine receptors. RyR proteins are essential for calcium-dependent excitation. Cells that do not express RyR lack excitation-contraction coupling and exhibit a several-fold reduction in Ca^{2+} current density. RyR-3 is expressed in the corpus striatum, thalamus and hippocampus as well as smooth muscle. In response to β -amyloid, RyR-3 levels are increased, altering Ca^{2+} homeostasis in neurons. RyR-3 may play a significant role in the progression of Alzheimer's disease.

REFERENCES

1. Otsu, K., et al. 1990. Molecular cloning of cDNA encoding the Ca^{2+} release channel (ryanodine receptor) of rabbit cardiac muscle sarcoplasmic reticulum. *J. Biol. Chem.* 265: 13472-13483.
2. Hakamata, Y., et al. 1992. Primary structure and distribution of a novel ryanodine receptor/calcium release channel from rabbit brain. *FEBS Lett.* 312: 229-235.
3. Otsu, K., et al. 1993. Chromosome mapping of five human cardiac and skeletal muscle sarcoplasmic reticulum protein genes. *Genomics* 17: 507-509.
4. Sorrentino, V., et al. 1993. Localization of a novel ryanodine receptor gene (RyR3) to human chromosome 15q14-q15 by *in situ* hybridization. *Genomics* 18: 163-165.

CHROMOSOMAL LOCATION

Genetic locus: RYR3 (human) mapping to 15q14; RyR3 (mouse) mapping to 2 E3.

SOURCE

RyR-3 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RyR-3 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.

Blocking peptide available for competition studies, sc-21330 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

RyR-3 (K-16) is recommended for detection of RyR-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (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-3 (K-16) is also recommended for detection of RyR-3 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for RyR-3 siRNA (h): sc-42638, RyR-3 siRNA (m): sc-42639, RyR-3 shRNA Plasmid (h): sc-42638-SH, RyR-3 shRNA Plasmid (m): sc-42639-SH, RyR-3 shRNA (h) Lentiviral Particles: sc-42638-V, and RyR-3 shRNA (m) Lentiviral Particles: sc-42639-V.

Molecular Weight of RyR-3: 552 kDa.

Positive Controls: mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Dabertrand, F., et al. 2007. Role of RYR3 splice variants in calcium signaling in mouse nonpregnant and pregnant myometrium. *Am. J. Physiol. Cell Physiol.* 293: C848-C854.
2. Dabertrand, F., et al. 2008. Full length ryanodine receptor subtype 3 encodes spontaneous calcium oscillations in native duodenal smooth muscle cells. *Cell Calcium* 44: 180-189.
3. Denda, S., et al. 2012. Ryanodine receptors are expressed in epidermal keratinocytes and associated with keratinocyte differentiation and epidermal permeability barrier homeostasis. *J. Invest. Dermatol.* 132: 69-75.

RESEARCH USE

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