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ProSci Incorporated
12170 Flint Place
Poway, CA 92064

Toll Free: +1 (888) 513 9525
Local: +1 (858) 513 2638
Fax: +1 (858) 513 2692

techsupport@prosci-inc.com

Junctophilin Detection Set

Cat. No.: PSI-1828

Junctophilin Detection Set

Specifications

SPECIES REACTIVITY:	Human
IMMUNOGEN:	Rabbit polyclonal antibodies were raised against peptides corresponding to amino acid sequences from each of the corresponding proteins.
TESTED APPLICATIONS:	IF, IHC, WB
APPLICATIONS:	These polyclonal antibodies can be used for detection of JPH1 - 4 by immunoblot at 1 - 2 µg/mL, and for detection of JPH1 - 4 by immunohistochemistry at 2.5 - 5 µg/mL, and Immunoflourescence.
POSITIVE CONTROL:	1) JPH1 Antibody: 293 Cell Lysate, Catalog No. 1210. JPH2 Antibody: Mouse Brain Tissue Lysate, Catalog No. 1403. JPH3 Antibody: Daudi Cell Lysate, Catalog No. 1224. JPH4 Antibody: 293 Cell Lysate, Catalog No. 1210.

Properties

PURIFICATION:	Antibodies are supplied as affinity chromatography purified IgG.
PHYSICAL STATE:	Liquid
BUFFER:	PBS containing 0.02% sodium azide.

CONCENTRATION:	Antibody 1 mg/mL
STORAGE CONDITIONS:	Stable at 4˚C for three months, store at -20˚C for up to one year.

Additional Info

USER NOTE:	Optimal dilutions for each application to be determined by the researcher.

Background and References

BACKGROUND:	Junctional complexes between the plasma membrane (PM) and endoplasmic/sarcoplasmic reticulum (ER/SR) are a common feature of all excitable cell types and mediate cross talk between cell surface and intracellular ion channels. Junctophilins (JPs) are important components of the junctional complexes. JPs are composed of a carboxy-terminal hydrophobic segment spanning the ER/SR membrane and a remaining cytoplasmic domain that shows specific affinity for the PM. Four JPs have been identified as tissue-specific subtypes derived from different genes: JPH1 is expressed in skeletal muscle, JPH2 is detected throughout all muscle cell types, and JPH3 and JPH4 are predominantly expressed in the brain and contribute to the subsurface cistern formation in neurons. JPH1 is essential for stabilizing the T-tubule and SR membranes to form junctions and provide an environment for the assembly of receptors such as the ryanodine receptor type 1 (RyR1). JPH2-null mice died of embryonic cardiac arrest and human patients with mutations in the JPH2 gene showed hypertrophic cardiomyopathy, demonstrating the importance of this protein. Mice lacking both JPH3 and JPH4 subtypes exhibit serious symptoms such as impaired learning and memory and are accompanied by abnormal nervous functions. A repeat expansion in JPH3 is associated with Huntington disease-like 2. Multiple isoforms of the JPH proteins are known to exist. **For images please see PDF data sheet**
REFERENCES:	1) Takeshima H, Komazaki S, Nishi M, et al. Junctophilins: a novel family of junctional membrane complex proteins. Mol. Cell. 2000; 6:11-22.
	2) Kakizawa S, Kishimoto Y, Hashimoto K, et al. Junctophilin-mediated channel crosstalk essential for cerebellar synaptic plasticity. EMBO J. 2007; 26:1924-33.
	3) Nishi M, Sakagami H, Komazaki S, et al. Coexpression of junctophilin type 3 and type 4 in brain. Brain Res. Mol. Brain Res. 2003; 118:102-10.
	4) Phimister AJ, Lango J, Lee EH, et al. Conformation-dependent stability of Junctophilin 1 (JP1) and Ryanodine Receptor type 1 (RyR1) channel complex is mediated by their hyper-reactive thiols. J. Biol. Chem. 2007; 282:8867-77.