SANTA CRUZ BIOTECHNOLOGY, INC.

Junctophilin-2 (H-3): sc-377086

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Junctophilins are components of the junctional complexes between plasma membranes and endoplasmic or sarcoplasmic reticulums present in all excitable cells. Junctophilins contain a cytoplasmic domain which binds to the plasma membrane, as well as an ER/SR membrane spanning hydrophobic C-terminal segment. The three subtypes in this family are Junctophilin-1, -2 and -3. Junctophilin-1 is predominantly expressed in skeletal muscle, but is also expressed at low levels in heart. Junctophilin-2 is expressed in heart and skeletal muscle. Mutant mice lacking the Jph2 gene exhibit embryonic lethality and possess cardiac myocytes that express abnormal calcium transients. Junctophilin-3 is expressed in brain. The JPH3 alternatively spliced exon 2A has been suggested as a site for CTG repeat expansion leading to a Huntington disease-like autosomal dominant disorder.

CHROMOSOMAL LOCATION

Genetic locus: JPH2 (human) mapping to 20q13.12; Jph2 (mouse) mapping to 2 H3.

SOURCE

Junctophilin-2 (H-3) is a mouse monoclonal antibody raised against amino acids 431-680 mapping near the C-terminus of Junctophilin-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Junctophilin-2 (H-3) is available conjugated to agarose (sc-377086 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377086 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377086 PE), fluorescein (sc-377086 FITC), Alexa Fluor® 488 (sc-377086 AF488), Alexa Fluor® 546 (sc-377086 AF546), Alexa Fluor® 594 (sc-377086 AF594) or Alexa Fluor® 647 (sc-377086 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377086 AF680) or Alexa Fluor® 790 (sc-377086 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Junctophilin-2 (H-3) is recommended for detection of Junctophilin-2 isoform 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

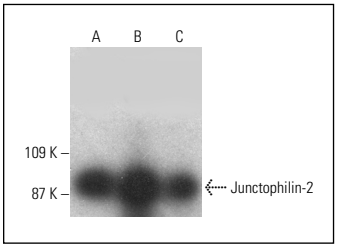
Suitable for use as control antibody for Junctophilin-2 siRNA (h): sc-72007, Junctophilin-2 siRNA (m): sc-72008, Junctophilin-2 siRNA (r): sc-270010, Junctophilin-2 shRNA Plasmid (h): sc-72007-SH, Junctophilin-2 shRNA Plasmid (m): sc-72008-SH, Junctophilin-2 shRNA Plasmid (r): sc-270010-SH, Junctophilin-2 shRNA (h) Lentiviral Particles: sc-72007-V, Junctophilin-2 shRNA (m) Lentiviral Particles: sc-72008-V and Junctophilin-2 shRNA (r) Lentiviral Particles: sc-270010-V.

Molecular Weight of Junctophilin-2: 100 kDa.

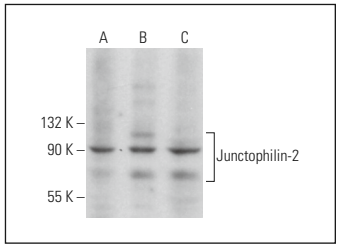
STORAGE

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

DATA



Junctophilin-2 (H-3) HRP: sc-377086 HRP. Direct western blot analysis of Junctophilin-2 expression in rat skeletal muscle (**A**), rat heart (**B**) and human skeletal muscle (**C**) tissue extracts.



Junctophilin-2 (H-3): sc-377086. Western blot analysis of Junctophilin-2 expression in C2C12 (**A**), A-10 (**B**) and L6 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cerrone, M., et al. 2017. Plakophilin-2 is required for transcription of genes that control calcium cycling and cardiac rhythm. Nat. Commun. 8: 106.
2. Miranda-Silva, D., et al. 2019. Characterization of biventricular alterations in myocardial (reverse) remodelling in aortic banding-induced chronic pressure overload. Sci. Rep. 9: 2956.
3. Brandenburg, S., et al. 2019. Junctophilin-2 expression rescues atrial dysfunction through polyadic junctional membrane complex biogenesis. JCI Insight 4: e127116.
4. Younis, N.N., et al. 2021. Pachymic acid attenuated doxorubicin-induced heart failure by suppressing miR-24 and preserving cardiac Junctophilin-2 in rats. Int. J. Mol. Sci. 22: 10710.
5. Biquand, A., et al. 2021. Titin M-line insertion sequence 7 is required for proper cardiac function in mice. J. Cell Sci. 134: jcs258684.
6. Ling, X.X., et al. 2021. Xin-Ji-Er-Kang protects myocardial and renal injury in hypertensive heart failure in mice. Phytomedicine 91: 153675.
7. Weninger, G., et al. 2022. Calpain cleavage of Junctophilin-2 generates a spectrum of calcium-dependent cleavage products and DNA-rich NT_1-fragment domains in cardiomyocytes. Sci. Rep. 12: 10387.
8. Gu, M., et al. 2023. Suppression of RBFox2 by multiple miRNAs in pressure overload-induced heart failure. Int. J. Mol. Sci. 24: 1283.
9. Valtonen, J., et al. 2023. The Junctophilin-2 mutation p.(Thr161Lys) is associated with hypertrophic cardiomyopathy using patient-specific iPS cardiomyocytes and demonstrates prolonged action potential and increased arrhythmogenicity. Biomedicines 11: 1558.

RESEARCH USE

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