SANTA CRUZ BIOTECHNOLOGY, INC.

phospholemman (C-1): sc-393415

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phospholemman, a member of the FXYD family of small membrane proteins, forms ion channels in the lipid bilayer that exhibit two novel features, selectivity for zwitterion tauring and switching between anion and cation-selective conformations. Taurine contributes as an osmolyte to regulate volume decrease, inplying a role for phospholemman in this process. Furthermore, phospholemman phosphorylation occurs following adrenergic or Insulin stimulation of cardiac and skeletal muscle, which belies a potential role in muscle contractility. FXYD proteins also interact with Na, K-ATPase in either the Golgi or plasma membrane in a tissue and isotype-specific manner, thus providing a possible mechanism for regulation of muscle contraction by phospholemman.

REFERENCES

1. Chen, Z.H., et al. 1999. Ion currents through mutant phospholemman channel molecules. Recept. Channels 6: 435-447.
2. Morales-Mulia, M., et al. 2000. Volume sensitive efflux of taurine in HEK293 cells overexpressing phospholemman. Biochim. Biophys. Acta 1496: 252-260.
3. Bogaev, R.C., et al. 2001. Gene structure and expression of phospholemman in mouse. Gene 271: 69-79.
4. Crambert, G., et al. 2002. Phospholemman (FXYD1) associates with Na,K-ATPase and regulates its transport properties. Proc. Natl. Acad. Sci. USA 99: 11476-11481.

CHROMOSOMAL LOCATION

Genetic locus: FXYD1 (human) mapping to 19q13.12.

SOURCE

phospholemman (C-1) is a mouse monoclonal antibody raised against amino acids 1-40 mapping at the N-terminus of phospholemman of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

phospholemman (C-1) is available conjugated to agarose (sc-393415 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393415 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393415 PE), fluorescein (sc-393415 FITC), Alexa Fluor® 488 (sc-393415 AF488), Alexa Fluor® 546 (sc-393415 AF546), Alexa Fluor® 594 (sc-393415 AF594) or Alexa Fluor® 647 (sc-393415 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393415 AF680) or Alexa Fluor® 790 (sc-393415 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

phospholemman (C-1) is recommended for detection of phospholemman of 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), 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).

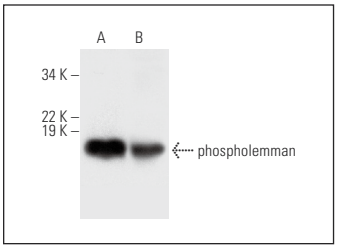
Suitable for use as control antibody for phospholemman siRNA (h): sc-106408, phospholemman shRNA Plasmid (h): sc-106408-SH and phospholemman shRNA (h) Lentiviral Particles: sc-106408-V.

Positive Controls: human heart extract: sc-363763 or human skeletal muscle extract: sc-363776.

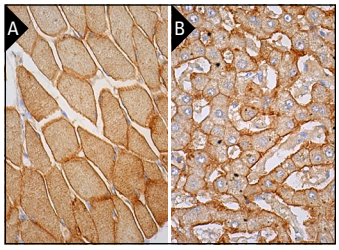
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



phospholemman (C-1): sc-393415. Western blot analysis of phospholemman expression in human heart (**A**) and human skeletal muscle (**B**) tissue extracts.



phospholemman (C-1): sc-393415. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing membrane and cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane staining of hepatocytes (**B**).

RESEARCH USE

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

PROTOCOLS

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