SANTA CRUZ BIOTECHNOLOGY, INC.

SERCA3 (h3): 293T Lysate: sc-173328

BACKGROUND

ATP dependent calcium pumps are responsible, in part, for the maintenance of low cytoplasmic free calcium concentrations. The ATP pumps that reside in intracellular organelles are encoded by a family of structurally related enzymes, termed the sarcoplasmic or endoplasmic reticulum calcium (SERCA) ATPases. The sarcoplasmic reticulum of striated muscle is a specialized intracellular membrane system that plays a critical role in the contraction and relaxation of muscle. The SERCAs mediate Ca^{2+} uptake into intracellular stores. SERCA-mediated Ca^{2+} uptake induces and maintains muscular relaxation. The SERCA1 gene is exclusively expressed in type II (fast) skeletal muscle. The SERCA2 gene is subject to tissue-dependent processing which is responsible for the generation of the SERCA2a muscle-specific form expressed in type I (slow) skeletal, cardiac and smooth muscle, and the SERCA2b isoform expressed in all cell types. The SERCA3 gene is not as well characterized and is found in non-muscle cells. SERCA2 plays an important part in regulating cardiac contractile function. SERCA3 is an isoform expressed in several cell types including platelets, lymphoid cells and mast cells. SERCA1, SERCA2 and SERCA3 all undergo alternative splicing.

REFERENCES

1. Aubier, M. and Viires, N. 1998. Calcium ATPase and respiratory muscle function. Eur. Respir. J. 11: 758-766.
2. Anger, M., et al. 1998. Cellular distribution of Ca^{2+} pumps and Ca^{2+} release channels in rat cardiac hypertrophy induced by aortic stenosis. Circulation 98: 2477-2486.
3. Loukianov, E., et al. 1998. Enhanced myo-cardial contractility and increased Ca^{2+} transport function in transgenic hearts expressing the fast-twitch skeletal muscle sarcoplasmic reticulum Ca^{2+}-ATPase. Circ. Res. 83: 889-897.
4. Bobe, R., et al. 1998. Expression of two isoforms of the third sarco/endoplasmic reticulum Ca^{2+} ATPase (SERCA3) in platelets. Possible recognition of the SERCA3b isoform by the PL/IM430 monoclonal antibody. FEBS Lett. 423: 259-264.
5. Ozog, A., et al. 1998. Characterization of the 3' end of the mouse SERCA3 gene and tissue distribution of mRNA spliced variants. FEBS Lett. 427: 349-352.

CHROMOSOMAL LOCATION

Genetic locus: ATP2A3 (human) mapping to 17p13.2.

PRODUCT

SERCA3 (h3): 293T Lysate represents a lysate of human SERCA3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

SERCA3 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive SERCA3 antibodies. Recommended use: 10-20 µl per lane.

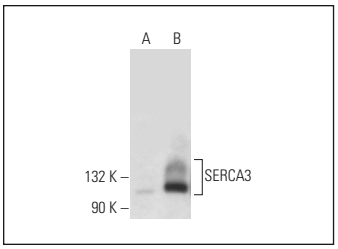
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SERCA3 (PL/IM430): sc-81759 is recommended as a positive control antibody for Western Blot analysis of enhanced human SERCA3 expression in SERCA3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



SERCA3 (PL/IM430): sc-81759. Western blot analysis of SERCA3 expression in non-transfected: sc-117752 (**A**) and human SERCA3 transfected: sc-173328 (**B**) 293T whole cell lysates.

RESEARCH USE

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