

SERCA3 (V-19): sc-26508

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 Ca²⁺ uptake into intracellular stores. SERCA-mediated Ca²⁺ 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 Ca²⁺ pumps and Ca²⁺ 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 Ca²⁺ transport function in transgenic hearts expressing the fast-twitch skeletal muscle sarcoplasmic reticulum Ca²⁺-ATPase. *Circ. Res.* 83: 889-897.
4. Bobe, R., et al. 1998. Expression of two isoforms of the third sarco/endoplasmic reticulum Ca²⁺ ATPase (SERCA3) in platelets. Possible recognition of the SERCA3b isoform by the PL/IM430 monoclonal antibody. *FEBS Lett.* 423: 259-264.
5. Poch, E., et al. 1998. Functional characterization of alternatively spliced human SERCA3 transcripts. *Am. J. Physiol., Cell Physiol.* 275: C1449-C1458.
6. 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; Atp2a3 (mouse) mapping to 11 B4.

SOURCE

SERCA3 (V-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SERCA3 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26508 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SERCA3 (V-19) is recommended for detection of all isoforms of SERCA3 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and 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).

SERCA3 (V-19) is also recommended for detection of all isoforms of SERCA3 in additional species, including equine and canine.

Suitable for use as control antibody for SERCA3 siRNA (h): sc-41295, SERCA3 siRNA (m): sc-41296, SERCA3 shRNA Plasmid (h): sc-41295-SH, SERCA3 shRNA Plasmid (m): sc-41296-SH, SERCA3 shRNA (h) Lentiviral Particles: sc-41295-V and SERCA3 shRNA (m) Lentiviral Particles: sc-41296-V.

Molecular Weight of SERCA3: 97 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or human platelet extract : sc-363773.

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.

RESEARCH USE

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

PROTOCOLS

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


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 Guaranteed

Try **SERCA3 (PL/IM430): sc-81759**, our highly recommended monoclonal alternative to SERCA3 (V-19).