**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 sarco(endo)plasmic reticulum calcium (SERCA) ATPases. The sarco(endo)plasmic reticulum of striated muscle is a specialized intracellular membrane system that plays a critical role in the contraction and relaxation of muscle. The SERCA ATPases 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.

**CHROMOSOMAL LOCATION**

Genetic locus: ATP2A2 (human) mapping to 12q24.11; Atp2a2 (mouse) mapping to 5 F.

**SOURCE**

SERCA2 (IID8) is a mouse monoclonal antibody raised against purified cardiac sarcoplasmic reticulum of canine origin.

**PRODUCT**

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

**APPLICATIONS**

SERCA2 (IID8) is recommended for detection of SERCA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

SERCA2 (IID8) is also recommended for detection of SERCA2 in additional species, including rabbit, bovine, canine and porcine.

Suitable for use as control antibody for SERCA2 siRNA (h): sc-36484, SERCA2 siRNA (m): sc-36485, SERCA2 shRNA Plasmid (h): sc-36484-SH, SERCA2 shRNA Plasmid (m): sc-36485-SH, SERCA2 shRNA (h) Lentiviral Particles: sc-36484-V and SERCA2 shRNA (m) Lentiviral Particles: sc-36485-V.

Molecular Weight of SERCA2: 100 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, HT-1080 whole cell lysate: sc-364183 or CCRF-CEM cell lysate: sc-2225.

**RESEARCH USE**

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

**STORAGE**

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

**DATA**

SERCA2 (IID8): sc-53010. Western blot analysis of SERCA2 expression in A-431 (A), HT-1080 (B), K-562 (C), CCRF-CEM (D) and Hep G2 (E) whole cell lysates.

SERCA2 (IID8): sc-53010. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of subset of myocytes.

**SELECT PRODUCT CITATIONS**


**CONJUGATES**

See SERCA2 (F-1): sc-376235 for SERCA2 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.