

SMS1 (L-12): sc-34046

BACKGROUND

The SMS (sphingomyelin synthase) family is a group of integral membrane proteins that includes SMS1 (sphingomyelin synthase 1) and SMS2 (sphingomyelin synthase 2). SMS1 is located in the Golgi apparatus, whereas SMS2 resides primarily at the plasma membrane. Both are bidirectional lipid choline-phosphotransferases which convert phosphatidylcholine (PC) and ceramide to sphingomyelin (SM) and diacylglycerol (DAG) and vice versa, the direction of which depends on the relative concentrations of ceramide and diacylglycerol as phosphocholine acceptors. Therefore, sphingomyelin synthases are thought to be involved in both cell death and survival. Tricyclodecan-9-yl-xanthogenate (D609), a selective tumor cytotoxic agent, inhibits SMS activity, contributing to tumor cell cytotoxicity. SMS proteins are expressed in liver, muscle, heart, brain, stomach and kidney. SMS1 is expressed as four alternatively spliced mRNAs (SMS1 α 1, SMS1 α 2, SMS1 β and SMS1 γ) that translate into three different proteins (SMS1 α , SMS1 β and SMS1 γ), which differ in their tissue distribution and function.

REFERENCES

1. Luberto, C. and Hannun, Y.A. 1998. Sphingomyelin synthase, a potential regulator of intracellular levels of ceramide and diacylglycerol during SV40 transformation. *J. Biol. Chem.* 273: 14550-14559.
2. Huitema, K., et al. 2004. Identification of a family of animal sphingomyelin synthases. *EMBO. J.* 23: 33-44.
3. Yamaoka, S., et al. 2004. Expression cloning of a human cDNA restoring sphingomyelin synthesis and cell growth in sphingomyelin synthase-defective lymphoid cells. *J. Biol. Chem.* 279: 18688-18693.
4. Meng, A., et al. 2004. Sphingomyelin synthase as a potential target for D609-induced apoptosis in U937 human monocytic leukemia cells. *Exp. Cell Res.* 292: 385-392.
5. Yang, Z., et al. 2005. The mouse sphingomyelin synthase 1 (SMS1) gene is alternatively spliced to yield multiple transcripts and proteins. *Gene* 363: 123-132.

CHROMOSOMAL LOCATION

Genetic locus: SGMS1 (human) mapping to 10q11.23; Sgms1 (mouse) mapping to 19 C1.

SOURCE

SMS1 (L-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SMS1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-34046 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

SMS1 (L-12) is recommended for detection of SMS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

SMS1 (L-12) is also recommended for detection of SMS1 in additional species, including equine, canine, bovine, porcine and avian.

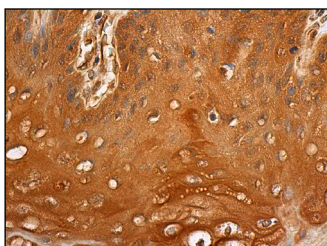
Suitable for use as control antibody for SMS1 siRNA (h): sc-44428, SMS1 siRNA (m): sc-45308, SMS1 shRNA Plasmid (h): sc-44428-SH, SMS1 shRNA Plasmid (m): sc-45308-SH, SMS1 shRNA (h) Lentiviral Particles: sc-44428-V and SMS1 shRNA (m) Lentiviral Particles: sc-45308-V.

Molecular Weight of SMS1: 49 kDa.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



SMS1 (L-12): sc-34046. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic and nuclear staining of squamous epithelial cells.

STORAGE

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

MONOS
Satisfaction
Guaranteed

Try **SMS1 (G-8): sc-133135** or **SMS1 (F-10): sc-166380**, our highly recommended monoclonal alternatives to SMS1 (L-12).