SANTA CRUZ BIOTECHNOLOGY, INC.

SMS1 (F-10): sc-166380

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 cholinephosphotransferases 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 (SMS1α1, SMS1α2, SMS1β and SMS1γ) that translate into three different proteins (SMS1α, SMS1β and SMS1γ), which differ in their tissue distribution and function.

REFERENCES

1. Luberto, C., et al. 1998. Sphingomyelin synthase, a potential regulator of intracellular levels of ceramide and diacylglycerol during SV40 transformation. Does sphingomyelin synthase account for the putative phosphatidylcholine-specific phospholipase C? 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 (F-10) is a mouse monoclonal antibody raised against amino acids 21-150 mapping at the N-terminus of SMS1 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.

STORAGE

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

APPLICATIONS

SMS1 (F-10) is recommended for detection of SMS1 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

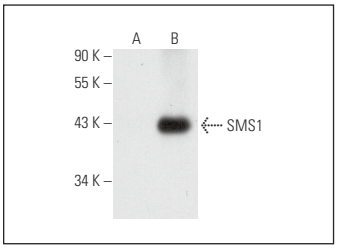
Molecular Weight of SMS1: 49 kDa.

Positive Controls: SMS1 (h): 293T Lysate: sc-115592.

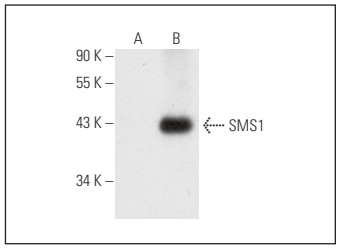
RECOMMENDED SUPPORT REAGENTS

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.

DATA



SMS1 (F-10): sc-166380. Western blot analysis of SMS1 expression in non-transfected: sc-117752 (**A**) and human SMS1 transfected: sc-115592 (**B**) 293T whole cell lysates.



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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.