

SMS1 (h): 293T Lysate: sc-115592

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. Does sphingomyelin synthase account for the putative phosphatidylcholine-specific phospholipase C? *J. Biol. Chem.* 273: 14550-14559.
2. Huitema, K., van den Dikkenberg, J., Brouwers, J.F. and Holthuis, J.C. 2004. Identification of a family of animal sphingomyelin synthases. *EMBO J.* 23: 33-44.
3. Yamaoka, S., Miyaji, M., Kitano, T., Umehara, H. and Okazaki, T. 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., Luberto, C., Meier, P., Bai, A., Yang, X., Hannun, Y.A. and Zhou, D. 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., Jean-Baptiste, G., Khoury, C. and Greenwood, M.T. 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.

PRODUCT

SMS1 (h): 293T Lysate represents a lysate of human SMS1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l 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.

APPLICATIONS

SMS1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive SMS1 antibodies. Recommended use: 10-20 μ l per lane.

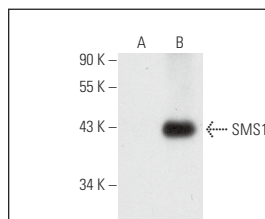
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SMS1 (F-10): sc-166380 is recommended as a positive control antibody for Western Blot analysis of enhanced human SMS1 expression in SMS1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

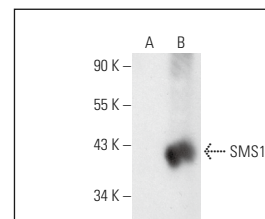
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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



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.



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.

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.