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# SMS1 (m): 293T Lysate: sc-123665

## 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 $\alpha$ 1, SMS1 $\alpha$ 2, SMS1 $\beta$  and SMS1 $\gamma$ ) that translate into three different proteins (SMS1 $\alpha$ , SMS1 $\beta$  and SMS1 $\gamma$ ), which differ in their tissue distribution and function.

## REFERENCES

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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.
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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.
6. SWISS-PROT/TrEMBL (Q86VZ5). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: Sgms1 (mouse) mapping to 19 C1.

## PRODUCT

SMS1 (m): 293T Lysate represents a lysate of mouse SMS1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## STORAGE

Store at -20 $^{\circ}$  C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## APPLICATIONS

SMS1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive SMS1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

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

## RESEARCH USE

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

## PROTOCOLS

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