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Product Information

Sphingomyelinase from *Bacillus cereus*

Catalog Numbers **S7651** and **S9396**

Storage Temperature 2–8 °C

CAS RN 9031-54-3

EC 3.1.4.12

Synonyms: Sphingomyelin choline phosphohydrolase;
Sphingomyelin phosphodiesterase; Smase

Product Description

Sphingomyelinase from *B. cereus* is a secreted phospholipase enzyme that belongs to the neutral sphingomyelinase family of enzymes. It is responsible for cleaving membrane bound sphingomyelin to yield ceramide and phosphocholine.¹ Ceramide is a membrane soluble second messenger that induces cell cycle activities such as apoptosis, cell differentiation, and cell proliferation.¹ Sphingomyelinase is a Mg²⁺ dependent enzyme and is activated by tumor necrosis factor- α (TNF- α), Fas ligand, CD-95, oxidized human low density lipoproteins (Ox-LDL), and various chemotherapeutic agents.^{1,2}

The protein precursor of Sphingomyelinase is Sphingomyelinase C with an unprocessed molecular mass of 36,873 Da.³

Catalog Number S7651 is supplied as a lyophilized powder containing potassium phosphate buffer salts and stabilizer. Catalog Number S9396 is supplied as a 50% glycerol solution containing 50 mM Tris-HCl, pH 7.5.

Specific Activity: ≥ 100 units/mg protein (Lowry)

Unit definition: One unit will hydrolyze 1.0 μ mole of TNPAL-sphingomyelin per minute at pH 7.4 at 37 °C.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

The lyophilized product, Catalog Number S7651, is soluble in water (5 mg/ml).

Storage/Stability

It is recommended to store the products at 2–8 °C. Under these conditions, the products are stable for at least 2 years.

References

1. Chatterjee, S., Neutral sphingomyelinase: past, present and future. *Chem Phys Lipids*, **102**, 79-96 (1999).
2. Hannun, Y., Functions of ceramide in coordinating cellular responses to stress. *Science*, **274**, 1855-1859 (1996).
3. Tomita, M., et al., Secondary structure of sphingomyelinase from *Bacillus cereus*. *J. Biochem.*, **108**, 811-815 (1990).

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