



Product Information

Sphingomyelinase from *Bacillus cereus*

Product Number **S 7651**
Storage Temperature 2-8 °C

E.C.# 3.1.4.12
CAS# 9031-54-3
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-alpha (α -TNF), Fas ligand, CD-95, oxidized human low density lipoproteins (Ox-LDL), and various chemotherapeutic agents.^{1,2}

Sphingomyelinase C is the protein precursor to the enzyme and it has a reported unprocessed molecular weight of 36,873 Da.³

Specific Activity: minimum 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 laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Sphingomyelinase is soluble in water (5 mg/ml).

Storage/Stability

It is recommended to store the product at 2-8 °C.

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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