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Product Information

CMP-Sialic Acid Synthetase from *Neisseria meningitidis* group B recombinant, expressed in *Escherichia coli*

Catalog Number **C1999**
Storage Temperature –20 °C

EC 2.7.7.43

Synonym: CTP: N-Acylneuraminate cytidylyltransferase

Product Description
CMP-Sialic Acid Synthetase is a 26.0 kDa cytoplasmic protein. The sequence is derived from *Neisseria meningitidis* group B and has been expressed in *Escherichia coli* BL21. The enzyme catalyzes the synthesis of CMP-sialic acid from CTP and sialic acid. [1]

CTP + *N*-acylneuraminate → diphosphate + CMP-*N*-acylneuraminate

The enzyme has been utilized to synthesize CMP-sialic acid and its derivatives. [2]

Isoelectric Point: 6.27[1]
Optimal pH: 6.27[1]
K_m (N-Acylneuraminate): 0.34 mM[3]
Specific Activity: ≥10 units per mg protein

Unit definition: One unit will catalyze the formation of 1.0 μmol CMP-Neu-5-Ac from Neu-5-Ac and CTP per minute at 37 °C at pH 8.5.

Enzymatic activity assays are performed in Tris-HCl buffer (100 mM, pH 8.5) containing Neu-5-Ac (1 mM) and CTP (1 mM) at 37 °C for 30 min and analyzed using capillary electrophoresis with a UV detector (200 nm).

Reagent
Supplied as a lyophilized powder containing Tris-HCl and NaCl.

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.

Storage/Stability
Store at –20 °C.

References
1. Supplier Data
2. Yu H, et al., Chemoenzymatic synthesis of CMP-sialic acid derivatives by a one-pot two-enzyme system: comparison of substrate flexibility of three microbial CMP-sialic acid synthetases. *Bioorg. & Med. Chem.* **2004***, 12*, 6427-6435.
3. Gilbert, M., et al., Purification and characterization of the recombinant CMP-sialic acid synthetase from *Neisseria meningitides*. *Biotechnol. Lett.* 19, 417-420 (1997)

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