CMP-Sialic Acid Synthetase
CMP-N-acetylneuraminic Acid Synthetase

Source
recombinant in *E. Coli*

Catalog Number
E-CMP01

Certification of Analysis Lot Number
903.1C

EC
2.7.7.43

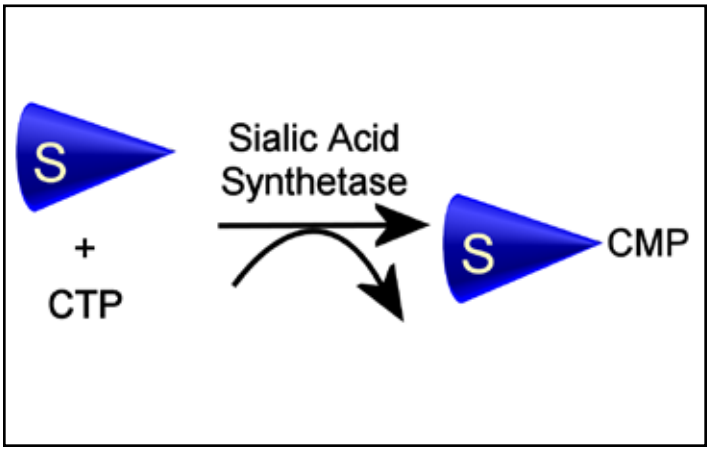
Contents
1 vial: CMP-Sialic Acid Synthetase - 60 µl (0.54 U)
Ammonium sulfate precipitate in1 mM sodium phosphate pH 7.5
1 vial: 5x Reaction buffer - 200mM Tris-HCl, pH 9.5
100 mM magnesium chloride - 400 µl

Specific activity >2 U/mg
Activity 9 U/ml

Specific Activity
One unit CMP-Sialic acid synthetase is defined as the amount that will produce one µmole of CMP-NANA per minute at 37oC and pH 9.5 from CTP and N-acetylneuraminic acid both at 8 mM.

Molecular Weight 46,000 Daltons
pH optimum: 5

Storage
Store enzyme at 4°C. Do not freeze.



Specificity
CMP-Sialic acid synthetase will activate N-glycolylneuraminic acid as well as many other derivatives of N-acetylneuraminic acid (see ref 2).

Formulation
The enzyme is provided as a sterile-filtered solution in 1 mM sodium phosphate pH7.5

Stability
Several days exposure to ambient temperatures will not reduce activity. Stable at least 12 months when stored properly.

Quality & Purity
CMP-Sialic Acid synthetase is tested for contaminating protease as follows: 10 ug of denatured BSA is incubated for 24 hours at 37°C with 2 µl of enzyme. SDS-PAGE analysis of the treated BSA shows no evidence of degradation.

The production strain of E. coli has been extensively tested and does not produce any detectable glycosidases.

E-CMP01 Specifications
CMP-Sialic Acid Synthetase

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Suggestions for use
for large scale production of CMP-NANA
(From reference 2)

2.2 g CTP (3.1 mM)
1 g N-acetylneuraminic acid (3.2 mM)
8 U CMP-Sialic acid synthetase in 50 ml of 50 mM Tris HCl pH 8.5, 50 mM MgCl2

1. Incubate for 3.5 hr at 220C with stirring and maintain the pH at 8.5 with addition of 1 N NaOH.
2. Filter out any precipitate.
3. To the supernatant, add 9 volumes ethanol and collect the precipitate by centrifugation at 10,000 x g for 10 minutes. Dry under vacuum. Yield ~90% at 95% purity.

References
1. Vann, W.F., Silver, R.P., Abeijon, C.,Chang, K., Aaronson, W., Sutton,A., Finn, C.W., Lindner, W. and Kotsatos, M. (1987) Purification, properties and genetic location of Escherichia coli cytidine 5'-monophosphate Nacetylneuraminic acid synthetase J. Biol. Chem. 262, 17556-17562.

2. Shames, S.I., Simon, E. S.,Christopher, C.W., Schmid, W, Whitesides, G.G. and Yang, L. (1991) CMP-N-acetylneuraminic acid synthetase of Escherichia coli: high level expression, purification and use in the enzymatic synthesis of CMP-Nacetylneuraminic acid and CMPneuraminic acid derivatives. Glycobiology 1, 187-191.

Warranties and liabilities
QA-Bio warrants that the above product conforms to the specifications described herein. Should the product fail for reasons other than through misuse QA-Bio will, at its option, replace free of charge or refund the purchase price. This warranty is exclusive and QA-Bio makes no other warrants, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose. QA-Bio shall not be liable for any incidental, consequential or contingent damages.

This product is intended for *in vitro* research only.

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