

## Product Information

**Sialic Acid Aldolase**  
from *Escherichia coli* K12, recombinant  
expressed in *Escherichia coli* BL21(DE3)

Catalog Number **S1826**  
Storage Temperature  $-20^{\circ}\text{C}$

EC 4.1.3.3

Synonyms: *N*-Acetylneuraminate lyase,  
*N*-Acetylneuraminate pyruvate-lyase (*N*-acetyl-  
D-mannosamine-forming)

### Product Description

Sialic acid aldolase is an oxo-acid-lyase, that cleaves the 3-4 carbon-carbon bond in sialic acid producing *N*-acetyl-D-mannosamine and pyruvate.

For the expressed *Escherichia coli* K12 enzyme:

Molecular mass: 33.4 kDa

Isoelectric point (pI): 6.13

pH optimum for activity: 6.5–9.0

This product is supplied as a lyophilized powder containing  $\geq 25\%$  protein, 64% Tris-HCl, and 5% NaCl.

Specific Activity:  $\geq 3.0$  units per mg protein

Unit Definition: One unit will catalyze the formation of 1.0  $\mu\text{mole}$  of Neu-5-Ac from Man-N-Ac and pyruvate per minute at  $37^{\circ}\text{C}$  at pH 8.0.

Enzymatic activity assays are performed in 1 M Tris-HCl buffer, pH 8.0, containing Man-N-Ac (1 mM) and pyruvate (5 mM) at  $37^{\circ}\text{C}$  for 15 minutes and analyzed using capillary electrophoresis with UV detection at 200 nm.

### 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

Reconstitute the lyophilized powder with water to  $\sim 5\text{ mg/mL}$ .

Solutions can be stored at  $2-8^{\circ}\text{C}$  for 1–2 months after reconstitution. They can also be aliquoted and frozen at  $-70^{\circ}\text{C}$  or  $-20^{\circ}\text{C}$  for 1 year. Multiple freeze-thaw cycles should be avoided.

### Storage/Stability

Store the product at  $-20^{\circ}\text{C}$ . It remains active for at least 1 year when stored properly.

### References

1. 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.*, **12**, 6427-6435 (2004).
2. Li, Y et al., *Pasteurella multocida* sialic acid aldolase: a promising biocatalyst. *Appl. Microbiol. Biotech.*, **79**, 963-970 (2008).

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