# Acetyl-CoA synthetase(EC 6.2.1.1), *Bacilus subtilis*

**Catalogue number:**

AE00081, 250 U (1 mL)

## Description

Recombinant acetyl-CoA synthetase (EC 6.2.1.1) is purified from a modified *E. coli* strain. Acetyl-CoA synthetase is an enzyme involved in metabolism of carbon sugars. It is classified in the ligase class of enzymes, meaning that it catalyzes the formation of a new chemical bond between two large molecules. The NZYTech enzyme is provided in 3.2 M ammonium sulphate.

## Purity

Acetyl-CoA synthetase has been determined to be >95% pure, according to sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) followed by Coomassie blue staining (Figure 1).
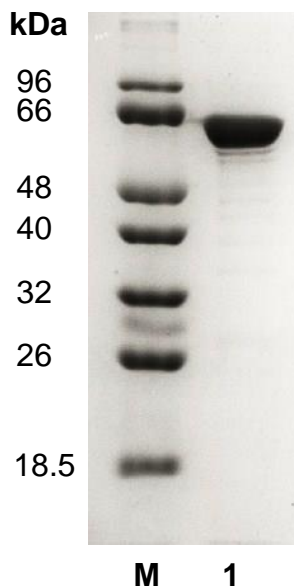


Figure 1. SDS-PAGE analysis of *B. subtilis* acetyl-CoA synthetase. Electrophoresis was performed using a 10% polyacrylamide gel. Lane M, molecular weight marker; Lane 1, purified acetyl-CoA synthetase from *E. coli* K12 (65 kDa).

## Storage temperature

Acetyl-CoA synthetase should be stored at 2 °C to 8 °C.

## Temperature and pH optimum

The optimum pH and temperature are 8.4 and 37 °C, respectively.

## Specific activity

250 U/mL

## Unit definition

One unit is defined as the amount of enzyme required to produce one µmol of NADH from NAD+ in a reaction mixture containing 128 mM TEA buffer (pH 8.4), 3.2 mM $MgCl_2$, 9.6 mM L-malic acid, 1.1 mM $NAD^+$, 2.7 mM ATP, 0.8 mM CoA, 32 mM sodium acetate, 0.16 mg/ml BSA, 15.7 U/ml citrate synthase and 12 U/ml L-malate dehydrogenase.

## Substrate specificity

Under the reaction conditions specified the enzyme might present a minor NADH oxidase and L-malate dehydrogenase activity.

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## Certificate of Analysis

| Test | Criteria | Result |
|------|----------|--------|
| Protein purity | Purity in line with the stated value | Meets specification |
| Activity | Up to 10% higher than stated value | Meets specification |

Approved by:

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