

## Native Escherichia coli Acetate Kinase

Cat. No. NATE-0017

Lot. No. (See product label)

### Introduction

**Description** In molecular biology, acetate kinase (EC 2.7.2.1), which is predominantly found in micro-organisms, facilitates the production of acetyl-CoA by phosphorylating acetate in the presence of ATP and a divalent cation. Short-chain fatty acids (SCFAs) play a major role in carbon cycle and can be utilized as a source of carbon and energy by bacteria. The enzyme is important in the process of glycolysis, enzyme levels being increased in the presence of excess glucose. The growth of a bacterial mutant lacking acetate kinase has been shown to be inhibited by glucose, suggesting that the enzyme is involved in excretion of excess carbohydrate. A related enzyme, butyrate kinase, facilitates the formation of butyryl-CoA by phosphorylating butyrate in the presence of ATP to form butyryl phosphate

**Applications** Acetate kinase is used to phosphorylate acetate to acetyl phosphate. Acetate Kinase from Escherichia coli has been used as part of an ATP-regenerating system to study the kinetics of agonist-stimulated transphosphatidylation.

**Synonyms** Acetate kinase (phosphorylating); Acetic kinase; Acetokinase; AK; EC 2.7.2.1; 9027-42-3; Acetate kinase

### Product Information

**Source** Escherichia coli

**Form** Lyophilized powder containing trehalose with small amounts of potassium phosphate, magnesium chloride, and dithiothreitol

**EC Number** EC 2.7.2.1

**CAS No.** 9027-42-3

**Activity** > 150 units/mg protein (biuret)

**Pathway** Carbon metabolism, organism-specific biosystem; Metabolic pathways, organism-specific biosystem; Propanoate metabolism, organism-specific biosystem

**Unit Definition** One unit will phosphorylate 1.0  $\mu$ mole of acetate to acetyl phosphate per min at pH 7.6 at 25°C.

### Storage and Shipping Information

**Storage** -20°C