Creative Enzymes®

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 transphosphatidylatio.
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 µmole of acetate to acetyl phosphate per min at pH 7.6 at 25°C.

Storage and Shipping Information

Storage	−20°C