

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 μ mole of acetate to acetyl phosphate per min at pH 7.6 at 25°C.

Storage and Shipping Information

Storage

-20°C