

## Aspartate Kinase (Crude Enzyme)

Cat. No. NATE-1827

Lot. No. (See product label)

### Introduction

**Description** Aspartate kinase (aspartokinase, aspartic kinase) is an enzyme that catalyzes the phosphorylation of the amino acid aspartate. This reaction is the first step in the biosynthesis of three essential amino acids: methionine, lysine, and threonine, known as the "aspartate family". The gene for aspartokinase is present only in microorganisms and plants; it is not present in animals, which must obtain aspartate-family amino acids in their diet. In *Escherichia coli*, aspartokinase is present as three independently regulated isozymes, each of which is specific to one of the three downstream biochemical pathways. This allows the independent regulation of the rates of methionine, lysine, and threonine production. The forms that produce threonine and lysine are subject to feedback inhibition, and all three can be repressed at the level of gene expression by high concentrations of their end-products. Absence from animals makes these enzymes key targets for new herbicides and biocides and for improvements in nutritional value of crops. This product with the indicated enzyme activity was briefly purified from engineered *E. coli*.

**Applications** agriculture

**Synonyms** aspartokinase; AK;  $\beta$ -aspartokinase; aspartic kinase

### Product Information

**Source** *E. coli*

**Appearance** Clear to translucent yellow solution

**EC Number** EC 2.7.2.4

**CAS No.** 9012-50-4

**Activity** Undetermined

**Reaction**  $\text{ATP} + \text{L-aspartate} = \text{ADP} + 4\text{-phospho-L-aspartate}$

**Notes** Since this product needs to be freshly prepared, it will take about 2 weeks after you confirm the order. Each time of the freeze-thawing may cause partial inactivation. Therefore, it should be dispensed as required and stored at  $-20^{\circ}\text{C}$  or lower. With the preservation of the extension of time, the enzyme activity will decline to a certain extent, so the product should be used as soon as possible. This product may have turbidity or precipitation in the production and preservation process, it can be mixed after melting and will not affect the normal use. This product is limited to scientific research use, shall not be used for clinical diagnosis or treatment, shall not be used for food or medicine, shall not be stored in ordinary residential. For your safety and health, please wear an experimental suit and wear disposable gloves.

### Usage and Packaging

**Package** 100ml

### Storage and Shipping Information

**Storage** at  $-20^{\circ}\text{C}$  or lower, for at least 1 month.