

Alanine Racemase (Crude Enzyme)

Cat. No. NATE-1854

Lot. No. (See product label)

Introduction

Description This enzyme belongs to the family of isomerases, specifically those racemases and epimerases acting on amino acids and derivatives. This enzyme participates in alanine and aspartate metabolism and D-alanine metabolism. It employs one cofactor, pyridoxal phosphate. At least two compounds, 3-Fluoro-D-alanine and D-Cycloserine are known to inhibit this enzyme. The D-alanine produced by alanine racemase is used for peptidoglycan biosynthesis. Peptidoglycan is found in the cell walls of all bacteria, including many which are harmful to humans. The enzyme is absent in higher eukaryotes but found everywhere in prokaryotes, making alanine racemase a great target for antimicrobial drug development. Alanine racemase can be found in some invertebrates. Bacteria can have one (alr gene) or two alanine racemase genes. Bacterial species with two genes for alanine racemase have one that is continually expressed and one that is inducible, which makes it difficult to target both genes for drug studies. However, knockout studies have shown that without the alr gene being expressed, the bacteria would need an external source of D-alanine in order to survive. Therefore, the alr gene is a feasible target for antimicrobial drugs. This product with the indicated enzyme activity was briefly purified from engineered E. coli.

Applications drug development; pharmacology; medicine; pharmacology

Synonyms L-alanine racemase

Product Information

Source E. coli

Appearance Clear to translucent yellow solution

EC Number EC 5.1.1.1

CAS No. 9024-06-0

Activity Undetermined

Reaction L-alanine = D-alanine

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 °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 °C or lower, for at least 1 month.