

Native *Bacillus stearothermophilus* Polynucleotide Phosphorylase

Cat. No. NATE-1908

Lot. No. (See product label)

Introduction

Description

Polynucleotide phosphorylase (PNPase) is a bifunctional enzyme with a phosphorolytic 3' to 5' exoribonuclease activity and a 3'-terminal oligonucleotide polymerase activity. It is also involved in mRNA processing and degradation in bacteria, plants, and humans.

Applications

The enzyme is useful for the preparation of polyribonucleotide.

Synonyms

PNPase; nucleoside diphosphate:polynucleotidyl transferase; polyribonucleotide nucleotidyltransferase; polynucleotide phosphorylase; polyribonucleotide phosphorylase; EC 2.7.7.8; 9014-12-4

Product Information

Source

Bacillus stearothermophilus

Appearance

Lyophilized

EC Number

EC 2.7.7.8

CAS No.

9014-12-4

Molecular Weight

300,000 - 340,000; Subunit molecular weight : ca. 85,000.

Specific Activity

more than 2,000 U/mg protein

Isoelectric point

4

pH Stability

9.0 - 11.0

Optimum pH

9.0 - 9.5

Thermal stability

No detectable decrease in activity up to 55 °C.

Michaelis Constant

(38 mM Tris-HCl buffer, pH 9.5, at 60 °C) Poly A: 0.27 mM^{**}; KH₂PO₄: 3.0 mM;
^{**}concentration of poly A was calculated as AMP concentration.

Unit Definition

One unit of activity is defined as the amount of PNPase that forms 1 μmol of ADP per hour at 60 °C by depolymerizing of Poly A.

Reaction

$\text{RNA}_{n+1} + \text{Pi} \leftrightarrow \text{RNA}_n + \text{Nucleoside diphosphate}$

Notes

Effectors: cations and anions.

Storage and Shipping Information

Storage

Stable at -20 °C for at least one year.