Creative Enzymes®

Native Escherichia coli Chloramphenicol Acetyltransferase

Cat. No. NATE-0107

Lot. No. (See product label)

Introduction

Description	Chloramphenicol acetyltransferase (or CAT) is a bacterial enzyme (EC 2.3.1.28) that detoxifies the antibiotic chloramphenicol and is responsible for chloramphenicol resistance in bacteria. This enzyme covalently attaches an acetyl group from acetyl-CoA to chloramphenicol, which prevents chloramphenicol from binding to ribosomes. A histidine residue, located in the C-terminal section of the enzyme, plays a central role in its catalytic mechanism.
Applications	Chloramphenicol acetyltransferase from Escherichia coli has been used in a study to assess the construction of a novel expression system in Klebsiella pneumoniae and its application for 1,3-propanediol production. Chloramphenicol acetyltransferase from Escherichia coli has also been used in a study to investigate site-directed mutagenesis and promoter functional analysis of the RM07 DNA fragment from Halobacterium halobium. The enzyme has been used in chloramphenicol acetyltransferase assay to optimize the transfection of plasmid DNA into primary cultures of adult mouse keratinocytes. It has also been used to assess the acetyl-CoA carboxylase-carboxyltransferase (ACC-CT) domain activity. This has been done using a coupled-two phase system measuring the selective partition of [14C]acetylchloramphenicol into an organic layer.
Synonyms	Acetyl-CoA:chloramphenicol 3-O-acetyltransferase; CAT; 9040-07-7; chloramphenicol acetyltransferase; chloramphenicol acetylase; chloramphenicol transacetylase; CAT I; CAT II; CAT III

Product Information

Source	Escherichia coli
Form	Type I, lyophilized powder. Partially purified; contains Tris buffer salts; Type II, buffered aqueous glycerol solution. Clear, colorless solution in 50% glycerol containing 5 mM Tris-HCl, pH 7.8, and 0.5 mM 2-mercaptoethanol
CAS No.	9040-07-7
Molecular Weight	mol wt 75 kDa (three identical subunits)
Activity	50,000-150,000 units/mg protein (Lowry)
Optimum pH	7.8
Unit Definition	One unit will convert 1.0 nanomole of chloramphenicol and acetyl-CoA to chloramphenicol 3-acetate and CoA per min at pH 7.8 at 25°C.

Storage and Shipping Information

Storage	−20°C