Product Insert

100mM Hydroxymethyl dCTP

Product:
5-hydroxymethyl-2'-deoxycytidine-5'-triphosphate Lithium Salt

Catalogue Number:
BIO-39046 1 x 250µl

Features

- >99% pure by HPLC
- Readily incorporated by standard DNA polymerases
- Hydroxymethylated substrates can be ligated by standard ligases
- DNase, RNase and Nickase free
- Available exclusively from Bioline, manufactured in our purpose-built lab

Applications

- Site-Directed Mutagenesis
- Substitution of dCTP in a wide variety of molecular biology assays
- Structural and activity studies of the restriction/modification systems of different organisms
- Labelling of DNA *in vitro*
- Methylation studies
- Studies of Hydroxymethylated DNA/protein interaction

Description
Bioline has developed a novel method for producing highly purified Hydroxymethyl dCTP. Using a unique enzymatic synthesis method, Bioline have been able to mimic the biological steps in the synthesis of Hydroxymethyl dCTP from T-even phages. Highly purified Hydroxymethyl dCTP can be used in a number of molecular biological applications.

Hydroxymethyl dCTP can be used as a substrate for several DNA polymerases under conditions that permit the amplification of DNA containing hydroxymethylated cytosine in place of cytosine. Hydroxymethyl dCTPs can be used to discriminate between the different DNA molecules synthesized in one or several PCR cycles. By the use of appropriate enzymes, it is possible to separate the un-hydroxymethylated starting material from the hemihydroxymethylated intermediate (produced by a single primer extension reaction) and from the fully-hydroxymethylated end product.

This ability to generate PCR products in which cytosine is uniformly replaced by hydroxymethylated cytosine can be applied to: (a) forensic DNA analysis, (b) the development of novel strategies for site-directed mutagenesis and (c) the production of DNA fragments resistant to cleavage by a wide range of restriction endonucleases, useful in the generation of cDNA libraries.

Product Specifications

Batch details:
Pack Size: 25µmol
Concentration: 100mM
Presentation: 1 x 250µl
Batch No: See vial

Storage Conditions:
Hydroxymethyl dCTP can be stored for 24 months at -20°C. Avoid multiple freeze/thaw cycles. For long-term storage, aliquoting is recommended.

Shipping Conditions:
On Dry Ice or Blue Ice

Formula:
$C_{10}H_{14}Li_4N_3O_{14}P_3$

Molecular Weight:
520.9g/mol

Characteristics:

A 100mM solution at pH 7.5 containing 25µmol (250µl) of HMdCTP.

SPECTRAL & HPLC ANALYSIS	PERFORMANCE
λmax pH 7.0	275nm
ε at λmax	7.7 E x $mmol^{-1}$ x cm^{-1}
A_{250}/A_{260}	0.90 ± 0.03
A_{280}/A_{260}	1.33 ± 0.03
Concentration	100mM ± 2%
Appearance	Clear Colourless Solution
pH of Solution	7.5
dNTP (HPLC Area)	≥ 99%
dNDP (HPLC Area)	< 1%
DNases, RNases, Nicking Activity	Negative

Associated Products:

PRODUCT	PACK SIZE	CAT NO.
ACCUZYME	250 Units	BIO-21051
AccuSure	250 Units	BIO-21068
CH3-Blue Chemically Competent Cells	1ml (10 x 100µl)	BIO-85039

Notes
1. This product insert is a declaration of analysis at the time of manufacture.
2. Research Use Only.