Fermentas
LIFE SCIENCES

CERTIFICATE OF ANALYSIS

dNTP Set, molecular biology grade

#R0182 4x100µmol

Lot:

Volume:
1ml of 100mM dATP
1ml of 100mM dCTP
1ml of 100mM dGTP
1ml of 100mM dTTP

Store at -20°C

In total 4 vials.

ISO 9001 ISO 14001
www.fermentas.com

Description

The set consists of 100mM aqueous solutions of dATP, dCTP, dGTP and dTTP each supplied in a separate vial. Since the nucleotides are provided separately, the dNTP Set offers maximum flexibility in preparation of reaction mixes for different applications.

Applications

For use in PCR*, long PCR, RT-PCR, cDNA synthesis, primer extension, DNA sequencing, DNA labeling.

General Characteristics

dATP $C_{10}H_{13}N_5O_{12}P_3Na_3$; MW = 557.2;
λ_{max}=259nm; ε=15.2x10^3 M^{-1}cm^{-1} at pH 7.0;

dCTP $C_9H_{13}N_3O_{13}P_3Na_3$; MW = 533.1;
λ_{max}=271nm; ε=9.3x10^3 M^{-1}cm^{-1} at pH 7.0.

dGTP $C_{10}H_{13}N_5O_{13}P_3Na_3$; MW = 573.2;
λ_{max}=253nm; ε=13.7x10^3 M^{-1}cm^{-1} at pH 7.0.

dTTP $C_{10}H_{14}N_2O_{14}P_3Na_3$; MW = 548.1;
λ_{max}=267nm; ε=9.6x10^3 M^{-1}cm^{-1} at pH 7.0.

PRODUCT USE LIMITATION.

This product is developed, designed and sold exclusively *for research purposes and in vitro use only.* The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.
Please refer to www.fermentas.com for Material Safety Data Sheet of the product.

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* The Polymerase Chain Reaction (PCR) process is covered by U.S.patents owned by Hoffman-La Roche.

Important Note

Mix well each dNTP solution prior to use.

Preparation of dNTP mixtures from dNTP Set

dNTP mixture to be prepared	Volumes of dNTP Set, µl				Water, nuclease-free, µl	Total volume of dNTP mixture, µl
	100mM dATP	100mM dGTP	100mM dCTP	100mM dTTP		
2mM of each dNTP	10	10	10	10	460	500
	100	100	100	100	4600	5000
	250	250	250	250	11500	12500
10mM of each dNTP	10	10	10	10	60	100
	100	100	100	100	600	1000
	250	250	250	250	1500	2500
25mM of each dNTP	10	10	10	10	–	40
	100	100	100	100	–	400
	250	250	250	250	–	1000

Getting 0.2mM dNTP for PCR

Volume of PCR Mixture	dNTP Mixture to be added to PCR		
	2mM	10mM	25mM
25µl	2.5µl	0.5µl	0.2µl
50µl	5µl	1µl	0.4µl
100µl	10µl	2µl	0.8µl

QUALITY CONTROL ASSAY DATA

Method	Specification	Result
Purity Assay		
HPLC column C18; detection UV (at corresponding λ_{max}); mobile phase: A=TEAA 0.1M, pH 7.0; B=60% CH_3CN/A)	>99%	dATP 99.2% dCTP 99.0% dGTP 99.0% dTTP 99.4%
LO test (test for detection of exo-, endo-deoxyribonuclease and phosphatase contaminants)	Not detectable	passed
Ribonuclease assay (test for detection of RNase contaminants using [^{3}H]-RNA as a substrate)	Not detectable	passed
Functional Assay		
PCR with *Pfu* and *Taq* DNA Polymerases	Production of 1000 bp PCR fragment from 2ng of genomic DNA	passed
pH		
	7.0-7.5	
Concentration		
Spectrophotometry	100±5mM	dATP 100mM dCTP 100mM dGTP 99mM dTTP 100mM

Quality authorized by:  Jurgita Zilinskiene