



Certificate of Analysis

COA No: CA_XBN-0006

Version: 05

dATP 100mM

Suitable for Research and further Manufacturing Use as an IVD component

Storage Conditions: -20°C

Lot number: DA-818110A

Expiry date: November 2020

Quality Control Parameters

2'-deoxyadenosine-5'-triphosphate



MW = 514.916 g/mol

Certified <1% deoxynucleoside monophosphates and deoxynucleoside diphosphates

Characteristics	Specification	Result
Concentration (at λ_{max} , pH 7.0, $\epsilon = 15.4 \text{ E} \times \text{mmol}^{-1} \times \text{cm}^{-1}$)	100 mM \pm 5%	102.3
pH of Solution(at 20°C)	7.5 – 8.0	7.53 @ 22°C
λ_{max} (at pH 7.0)	259 \pm 1 nm	259.5
A250/A260	0.78 \pm 0.03	0.79
A280/A260	0.15 \pm 0.02	0.13
Purity dATP (HPLC Area % at λ_{max})	\geq 99%	99.8%
dNDP + dNMP (HPLC Area % at λ_{max})	<1%	Passed
Appearance	Clear colourless solution	Passed

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Analysis	Specification	Result
Functional	A 3Kb Lambda DNA fragment is amplified with a dilution series of dATP, using standard conditions and 30 cycles. Single distinct bands were observed with agarose gel electrophoresis (ethidium stained).	Passed
DNA contamination	Quantitative PCR analysis with no template. Presence of <i>E. coli</i> and mouse genomic DNA checked. Test sample must amplify in line with a reference sample.	Passed
DNase / RNase / Nicking Activity	Incubation of a 1Kb double stranded DNA fragment. Incubation for 4 hours at 37°C with dilution series of DNase I. Analysed by agarose gel electrophoresis. Test sample must show less degradation than the limit of detection 2.5×10^{-3} U DNase.	Passed
	Quantitative PCR analysis with high and low RNase standards. Test sample must show less RNase activity than the limit of detection 9.7×10^{-3} ng/ μ L RNase.	Passed
	Incubation of dATP with supercoiled control plasmid. Analysed by agarose gel electrophoresis. Test sample does not show an increase of linearized or relaxed plasmid.	Passed

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Certificate of Analysis

COA No: CA_XBN-0007

Version: 05

dCTP 100mM

Suitable for Research and further Manufacturing Use as an IVD component

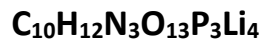
Storage Conditions: -20°C

Lot number: DC-818110A

Expiry date: November 2020

Quality Control Parameters

2'-deoxycytidine-5'-triphosphate



MW = 490.891 g/mol

Certified <1% deoxynucleoside monophosphates and deoxynucleoside diphosphates

Characteristics	Specification	Result
Concentration (at λ_{max} , pH 7.0, $\epsilon = 9.1 \text{ E} \times \text{mmol}^{-1} \times \text{cm}^{-1}$)	100 mM \pm 5%	102.7 mM
pH of Solution(at 20°C)	7.5 – 8.0	7.5 @ 22°C
λ_{max} (at pH 7.0)	272 \pm 1 nm	271 nm
A250/A260	0.82 \pm 0.03	0.80
A280/A260	0.98 \pm 0.03	0.96
Purity dCTP (HPLC Area % at λ_{max})	\geq 99%	99.9%
dNDP + dNMP (HPLC Area % at λ_{max})	<1%	Passed
Appearance	Clear colourless solution	Passed

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Certificate of Analysis

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Analysis	Specification	Result
Functional	A 3Kb Lambda DNA fragment is amplified with a dilution series of dCTP, using standard conditions and 30 cycles. Single distinct bands were observed with agarose gel electrophoresis (ethidium stained).	Passed
DNA contamination	Quantitative PCR analysis with no template. Presence of <i>E. coli</i> and mouse genomic DNA checked. Test sample must amplify in line with a reference sample.	Passed
DNase / RNase / Nicking Activity	Incubation of a 1Kb double stranded DNA fragment. Incubation for 4 hours at 37°C with dilution series of DNase I. Analysed by agarose gel electrophoresis. Test sample must show less degradation than the limit of detection 2.5×10^{-3} U DNase.	Passed
	Quantitative PCR analysis with high and low RNase standards. Test sample must show less RNase activity than the limit of detection 9.7×10^{-3} ng/ μ L RNase.	Passed
	Incubation of dCTP with supercoiled control plasmid. Analysed by agarose gel electrophoresis. Test sample does not show an increase of linearized or relaxed plasmid.	Passed

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Certificate of Analysis

COA No: CA_XBN-0008

Version: 05

dGTP 100mM

Suitable for Research and further Manufacturing Use as an IVD component

Storage Conditions: -20°C

Lot number: DG-818110A

Expiry date: November 2020

Quality Control Parameters

2'-deoxyguanosine-5'-triphosphate



MW = 530.916 g/mol

Certified <1% deoxynucleoside monophosphates and deoxynucleoside diphosphates

Characteristics	Specification	Result
Concentration (at λ_{max} , pH 7.0, $\epsilon = 13.7 \text{ E} \times \text{mmol}^{-1} \times \text{cm}^{-1}$)	100 mM \pm 5%	101.1 mM
pH of Solution(at 20°C)	7.5 – 8.0	7.60 @ 19.6 °C
λ_{max} (at pH 7.0)	252 \pm 1 nm	252.5 nm
A250/A260	1.16 \pm 0.05	1.17
A280/A260	0.66 \pm 0.03	0.67
dNTP (HPLC Area % at λ_{max})	\geq 99%	99.41%
dNDP + dNMP (HPLC Area % at λ_{max})	<1%	Passed
Appearance	Clear colourless solution	Passed

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Version: 05

Analysis	Specification	Result
Functional	A 3Kb Lambda DNA fragment is amplified with a dilution series of dGTP, using standard conditions and 30 cycles. Single distinct bands were observed with agarose gel electrophoresis (ethidium stained).	Passed
DNA contamination	Quantitative PCR analysis with no template. Presence of <i>E. coli</i> and mouse genomic DNA checked. Test sample must amplify in line with a reference sample.	Passed
DNase / RNase / Nicking Activity	Incubation of a 1Kb double stranded DNA fragment. Incubation for 4 hours at 37°C with dilution series of DNase I. Analysed by agarose gel electrophoresis. Test sample must show less degradation than the limit of detection 2.5×10^{-3} U DNase.	Passed
	Quantitative PCR analysis with high and low RNase standards. Test sample must show less RNase activity than the limit of detection 9.7×10^{-3} ng/ μ L RNase.	Passed
	Incubation of dGTP with supercoiled control plasmid. Analysed by agarose gel electrophoresis. Test sample does not show an increase of linearized or relaxed plasmid.	Passed

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Version: 05

dTTP 100mM

Suitable for Research and further Manufacturing Use as an IVD component

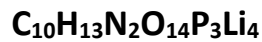
Storage Conditions: -20°C

Lot number: DT-818110A

Expiry date: November 2020

Quality Control Parameters

2'-deoxythymidine-5'-triphosphate



MW = 505.903 g/mol

Certified <1% deoxynucleoside monophosphates and deoxynucleoside diphosphates

Characteristics	Specification	Result
Concentration (at λ_{max} , pH 7.0, $\epsilon = 9.5 \text{ E} \times \text{mmol}^{-1} \times \text{cm}^{-1}$)	100 mM \pm 5%	103.0 mM
pH of Solution(at 20°C)	7.5 – 8.0	7.50 @ 18.8 °C
λ_{max} (at pH 7.0)	267 \pm 1 nm	267.5
A250/A260	0.65 \pm 0.03	0.64
A280/A260	0.73 \pm 0.02	0.73
Purity dTTP (HPLC Area % at λ_{max})	\geq 99%	99.84%
dNDP + dNMP (HPLC Area % at λ_{max})	<1%	Passed
Appearance	Clear colourless solution	Passed

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DNA contamination	Quantitative PCR analysis with no template. Presence of <i>E. coli</i> and mouse genomic DNA checked. Test sample must amplify in line with a reference sample.	Passed
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	Quantitative PCR analysis with high and low RNase standards. Test sample must show less RNase activity than the limit of detection 9.7×10^{-3} ng/ μ L RNase.	Passed
	Incubation of dTTP with supercoiled control plasmid. Analysed by agarose gel electrophoresis. Test sample does not show an increase of linearized or relaxed plasmid.	Passed

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