

## Technical bulletin

QF 24 V4  
V1 Sept 2023

# dNTP

### Test sample information

#### 1. Control samples

dATP, dCTP, dGTP, dTTP (Bio Basic)

dATP, dCTP, dGTP, dTTP (Thermo)

#### 2. Test samples

dATP (100 mM)

dCTP (100 mM)

dGTP (100 mM)

dTTP (100 mM)

### Comparative sample

#### 1. HPLC

**1.1** Mix the test sample and the control sample dATP, dCTP, dGTP, and dTTP to prepare 2 mM dNTPs for HPLC testing.

**1.2** Obtain the map.

#### 2. qPCR

**2.1** Mix the test samples dATP, dCTP, dGTP, and dTTP to prepare 2.5 mM dNTPs.

**2.2** Dilute the control substance to 2.5 mM dNTPs.

**2.3** Perform quantitative PCR detection on test samples and control substances.

##### 2.3.1 Reaction system

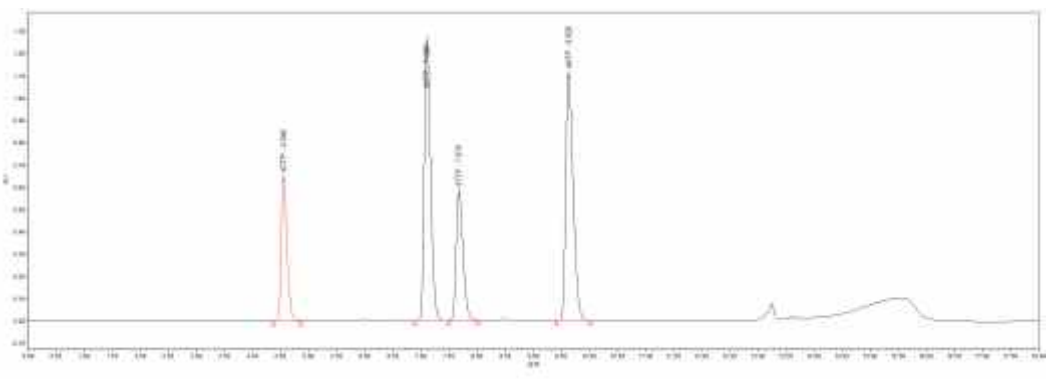
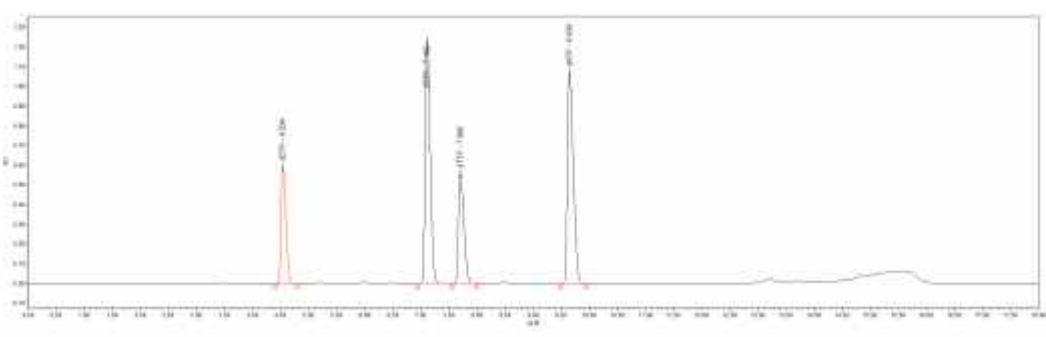
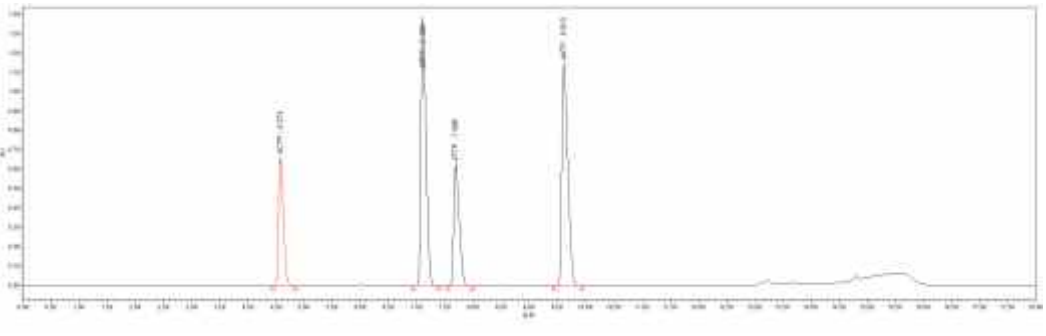
2x Taq qPCR mix (dNTP)	10 µl
RD-QC-human79F (10 µM)	0.5 µl
RD-QC-human79R (10 µM)	0.5 µl
RD_QC_79probe (10 µM)	0.5 µl
human-79- plasmid	1 µl
dNTPs (2.5 mM)	1.6 µl
ddH <sub>2</sub> O	5.9 µl

##### 2.3.2 Reaction conditions

95°C, 3 min, (95°C 10 s, 60°C 30s acquisition) 45 cycles

## Summary of test results

### 1. HPLC spectrum comparison

Sample Name	dNTPS
Bio Basic	
Thermo	
Megadimensional	



## 2. qPCR comparison results

Sample Name	Template Amount	CT Value	Average Value	Amplification Curve
Detection	0.001ng	18.887	18.91	
		18.926		
	0.0001ng	24.348	24.34	
		24.324		
Thermo	0.001ng	18.816	18.85	
		18.879		
	0.0001ng	24.598	24.62	
		24.645		
A610057	0.001ng	18.902	18.88	
		18.855		
	0.0001ng	24.441	24.46	
		24.473		

## 3. Comparison of dNTPs full inspection results

**Table 1.** Comparison of dATP full test results

Test items	Detection Indicator	dATP	
		Bio Basic	Thermo
Concentration	100±3 mM	100.1 mM	Conforms
pH	7.3-7.5	-	Conforms
Appearance	Clear colorless	Conforms	Conforms
Identity	7.8±0.5	-	Conforms
Purity	≥99.0% triphosphate	99.7%	Conforms
Base Purity	≥99.5% deoxynucleoside	-	Conforms
Pyrophosphate	≤0.0003	-	Conforms
λmax	259±2 nm	259 nm	Conforms
A <sub>250</sub> /A <sub>260</sub>	0.80±0.03	0.77	Conforms
A <sub>280</sub> /A <sub>260</sub>	0.15±0.02	0.15	Conforms
Endo-and Exodeoxyribonucleases	Not detectable	Not detectable	Conforms
Ribonucleases	Not detectable	Not detectable	Conforms
Functional texting	Conforms	Conforms	Conforms
Human DNA	Not detectable	Detectable	Conforms
E.coli DNA	Not detectable	Not detectable	Conforms

**Table 2.** Comparison of dCTP full inspection results

Test items	Detection Indicator	dCTP	
		Bio Basic	Thermo
Concentration	100±3 mM	100.1 mM	Conforms
pH	7.3-7.5	-	Conforms
Appearance	Clear colorless	Conforms	Conforms
Identity	7.8±0.5	-	Conforms
Purity	≥99.0% triphosphate	99.9%	Conforms
Base Purity	≥99.5% deoxynucleoside	-	Conforms
Pyrophosphate	≤0.0003	-	Conforms
λ <sub>max</sub>	259±2 nm	272 nm	Conforms
A <sub>250</sub> /A <sub>260</sub>	0.82±0.03	0.80	Conforms
A <sub>280</sub> /A <sub>260</sub>	0.98±0.05	0.98	Conforms
Endo-and Exodeoxyribonucleases	Not detectable	Not detectable	Conforms
Ribonucleases	Not detectable	Not detectable	Conforms
Functional texting	Conforms	Conforms	Conforms
Human DNA	Not detectable	Detectable	Conforms
E.coli DNA	Not detectable	Not detectable	Conforms

**Table 3.** Comparison of dGTP full inspection results

Test items	Detection Indicator	dGTP	
		Bio Basic	Thermo
Concentration	100±3 mM	99.3 mM	Conforms
pH	7.3-7.5	-	Conforms
Appearance	Clear colorless	Conforms	Conforms
Identity	7.8±0.5	-	Conforms
Purity	≥99.0% triphosphate	99.8%	Conforms
Base Purity	≥99.5% deoxynucleoside	-	Conforms
Pyrophosphate	≤0.0003	-	Conforms
λ <sub>max</sub>	253±2 nm	252 nm	Conforms
A <sub>250</sub> /A <sub>260</sub>	1.15±0.04	1.15	Conforms
A <sub>280</sub> /A <sub>260</sub>	0.66±0.03	0.67	Conforms
Endo-and Exodeoxyribonucleases	Not detectable	Not detectable	Conforms
Ribonucleases	Not detectable	Not detectable	Conforms
Functional texting	Conforms	Conforms	Conforms
Human DNA	Not detectable	Detectable	Conforms
E.coli DNA	Not detectable	Not detectable	Conforms

**Table 4.** Comparison of dTTP full inspection results

Test items	Detection Indicator	dTTP	
		Bio Basic	Thermo
Concentration	100±3 mM	100.1 mM	Conforms
pH	7.3-7.5	-	Conforms
Appearance	Clear colorless	Conforms	Conforms
Identity	7.8±0.5	-	Conforms
Purity	≥99.0% triphosphate	99.7%	Conforms
Base Purity	≥99.5% deoxynucleoside	-	Conforms
Pyrophosphate	≤0.0003	-	Conforms
λ <sub>max</sub>	267±2 nm	267 nm	Conforms
A <sub>250</sub> /A <sub>260</sub>	0.65±0.03	0.64	Conforms
A <sub>280</sub> /A <sub>260</sub>	0.74±0.05	0.75	Conforms
Endo-and Exodeoxyribonucleases	Not detectable	Not detectable	Conforms
Ribonucleases	Not detectable	Not detectable	Conforms
Functional texting	Conforms	Conforms	Conforms
Human DNA	Not detectable	Detectable	Conforms
E.coli DNA	Not detectable	Not detectable	Conforms

### Test Conclusion

The efficiency of the test samples in HPLC and qPCR experimental applications is equivalent to that of the control samples.



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