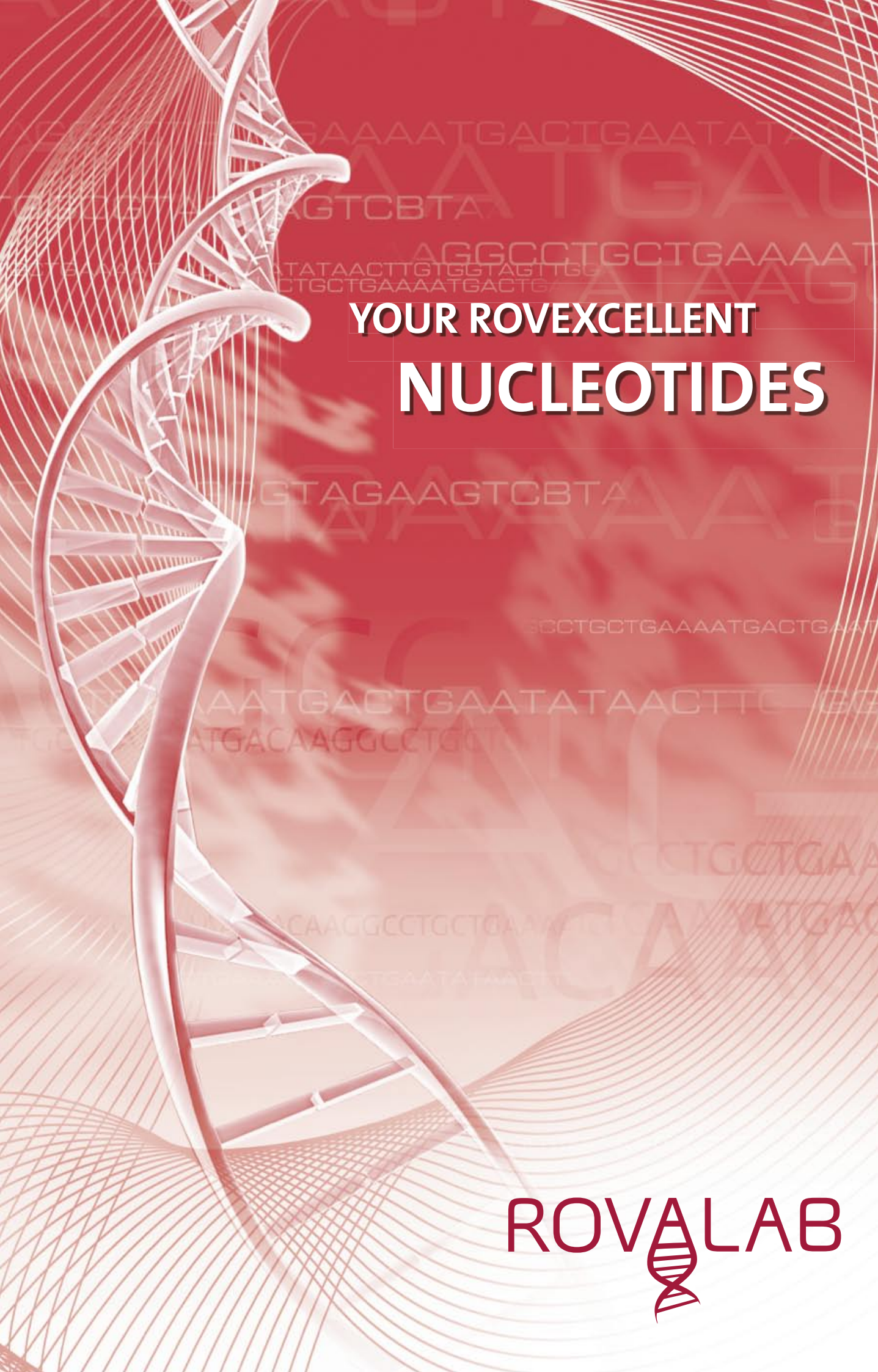

YOUR ROVEXCELLENT
NUCLEOTIDES
ROVALAB

ROVEXCELLENT dNTPs

Nucleotides are essential and critical components in amplification reactions and their purity significantly influences your PCR results.

Highest quality control standard for constant best results

ROVALAB applies technologies which result in an excellent dNTP performance and an absolute purity. Our large Quality Control package consisting of multiple functional: (e.g. real-time PCR, 30kb PCR) and physical assays (e.g. detection of contaminations and HPLC purity) with precise and most demanding criteria is routinely used.

ROVEXCELLENT dNTPs will give you highest constant quality for reliable, most sensitive and consistent results in your experiments. This allows you to rely on the dNTPs and concentrate on your research.

Excellent Performance

Perfection of Real Time PCR results

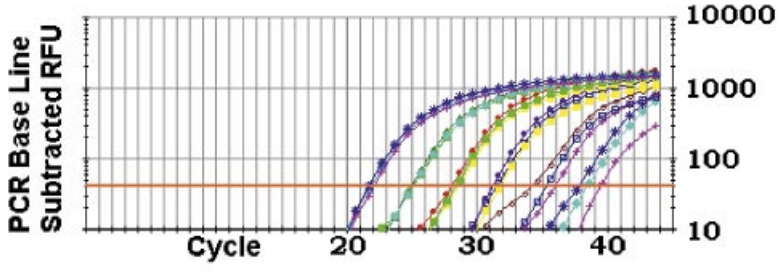
The accurate and precise results of real-time PCR method are collected in the extremely reproducible exponential phase of amplification. Analysis of reactions at a given cycle number provide several orders magnitude of dynamic range.

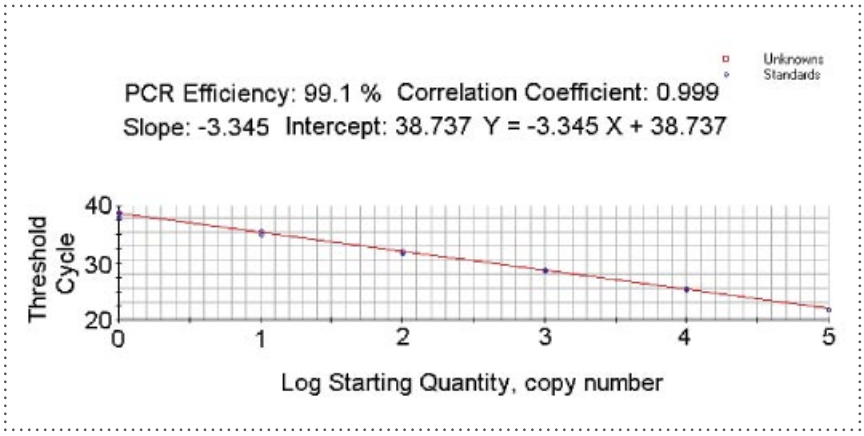
In "perfect" reactions, the number of amplicon doubles at each cycle and the characteristics of the resulting standard curve are:

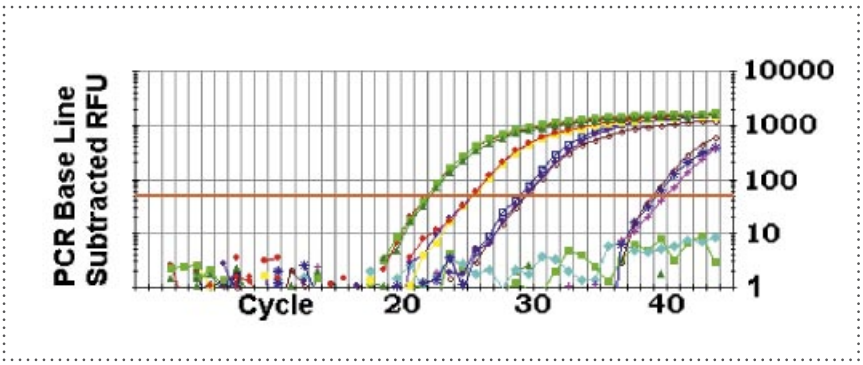
> PCR Efficiency = 100 %
> Correlation Coefficient = 1.000
> Slope = - 3.300

ROVALAB does the real-time PCR test as routine quality control.

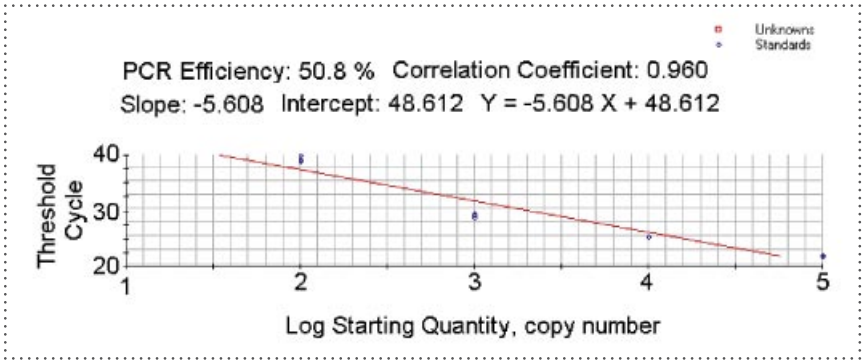
Amplification with ROVEXCELLENT dNTPs narrows the theoretical maximal output







Application with competitor's dNTPs

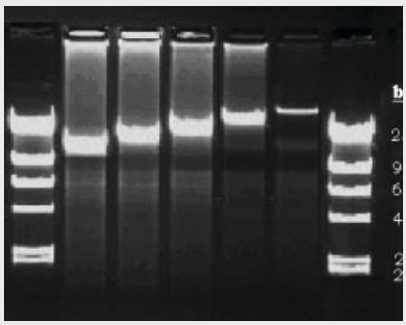


Efficiency of the amplification of ß-actin gene using log fold serial dilutions of human genomic DNA from 100 ng to 1 pg. Detection with TaqMan reporter on Bio-Rad i-Cycler

Outstanding Amplification up to 40 kb PCR

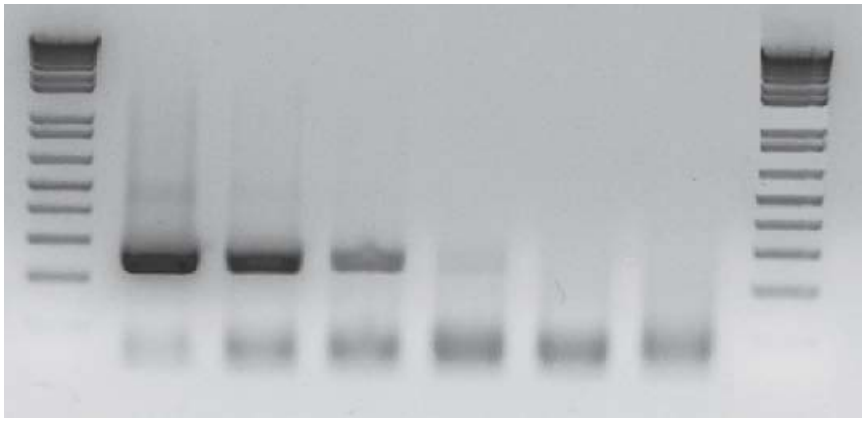
One of the most stringent tests for performance in PCR is the long-range 40kb-PCR. ROVALAB does a long PCR test as standard quality control.

ROVEXCELLENT dNTPs will help you to improve your results reliably in all types of PCR from 100 bp fragments up to 40 kb or in amplification of very difficult GC rich templates, due to their outstanding purity.



Efficient amplification of 1 ng lambda DNA using ROVEXCELLENT dNTPs 0.4 mM, 1.25 U ROVALAB Taq DNA Polymerase (50µl reaction mixture) in the demanding 40kb-Test on a 0,5% agarose gel. Marker: lambda DNA HindIII digest

Superier RT-PCR at extreme dilutions



RT-PCR amplification of purified serial diluted ssRNA from HCV in clinical blood samples.

Single Copy Gene Amplification of Estrogen Receptor Target Gene with ROVEXCELLENT dNTPs

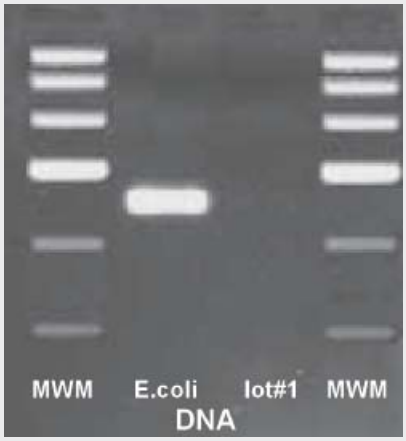
Template-sensitivity of PCR with ROVALAB Taq polymerase and dNTPs
Template: Human Genomic DNA (ng/µl) ER (1,233 bp)

Absolute purity

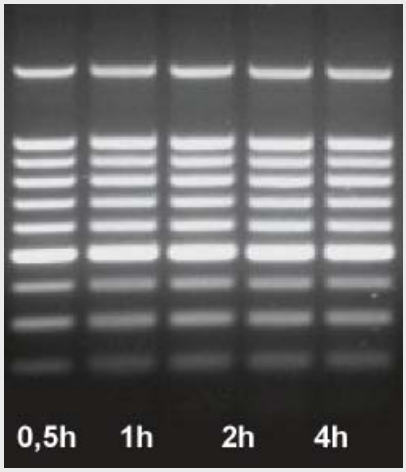
DNA free nucleotides without any contamination are a stringent requirement for diagnostic applications

Sensitive DNA Detection Test

A primer mix suitable for the amplification of universal bacterial DNA and additionally of E. coli-DNA was elongated with ROVALAB Hot Start Polymerase and ROVEXCELLENT dnTPs

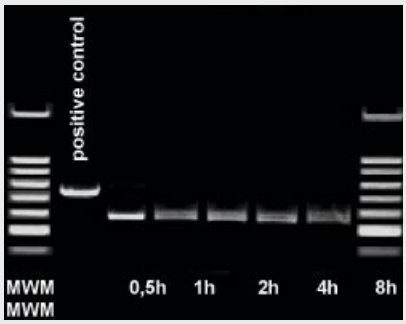


ROVEXCELLENT dNTPs are Exonuclease, Endonuclease and RNase free



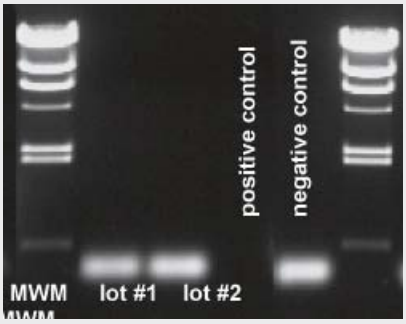
Exonuclease Test

Incubation of 2,6 µg DNA ladder with 5 µl ROVEXCELLENT dNTP solution in DNase buffer for different times. Final volume of mixture is 30 µl.



Endonuclease Test

Incubation of 2 µg pBR322-plasmid (1µg/µl) with 16 µl ROVEXCELLENT dNTP solution in DNase buffer for different times. Final volume of mixture is 20 µl. For positive control reaction 12 units BAMHI where added (lane 1)

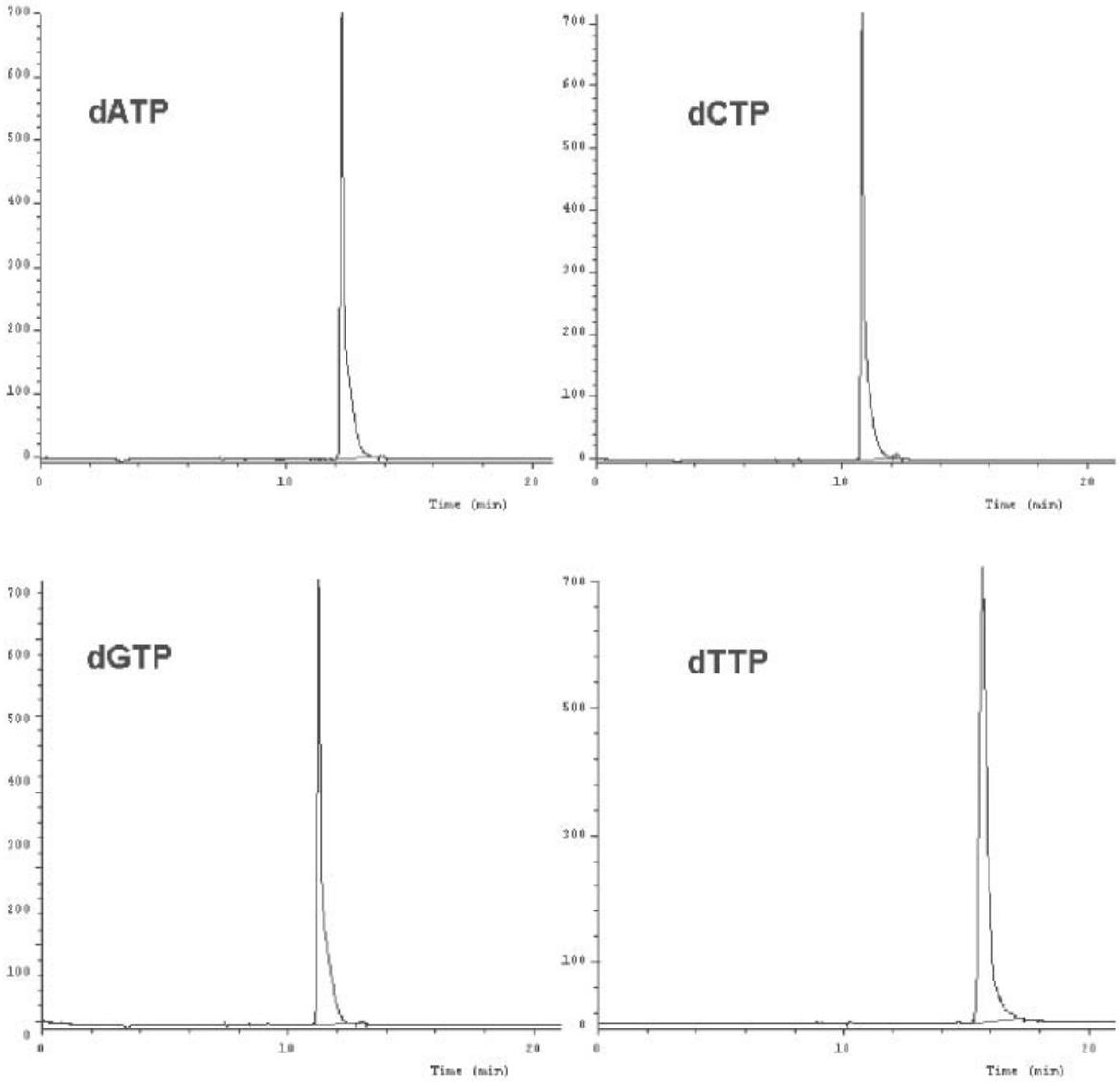


RNase Test

Two different batches of ROVEXCELLENT dNTPs were incubated with 20 µg t-RNA in a 60 µl reaction volume containing RNase buffer. The positive control included RNase One.

Purity and high quality standards of ROVALAB dNTPs

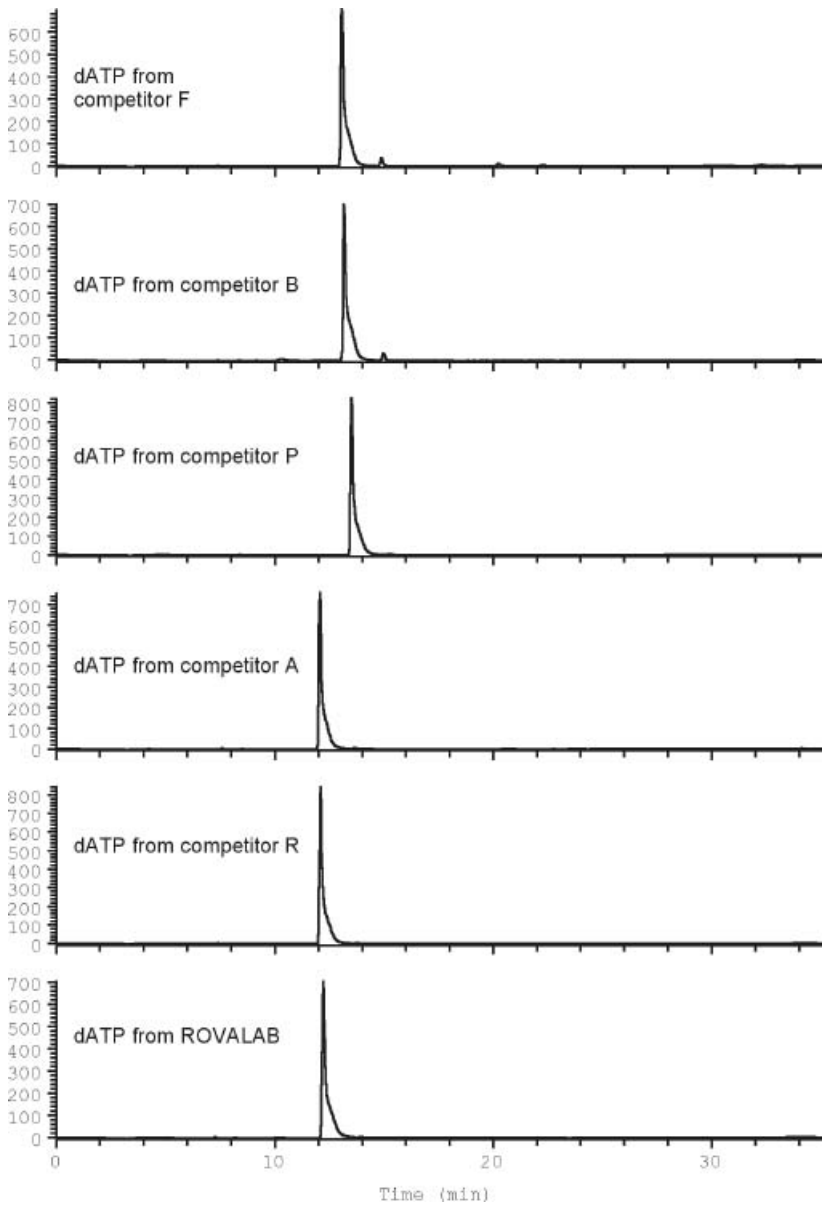
ROVEXCELLENT dNTPs have a guarateed purity > 99 % by HPLC, are free of of strong PCR inhibiting contaminants i.e. pyrophosphates, mono-,di- and tetraphosphates etc.



All lots are checked on HPLC for their purity. HPLC is done on a Eurospher-100 C18 RP-column with a methanol/potassium phosphate buffer for dATP and dGTP and TEAA/acetonitril buffer for dCTP and dTTP. Detection occurs at 254nm.

Superior Purity of ROVALAB dNTPs

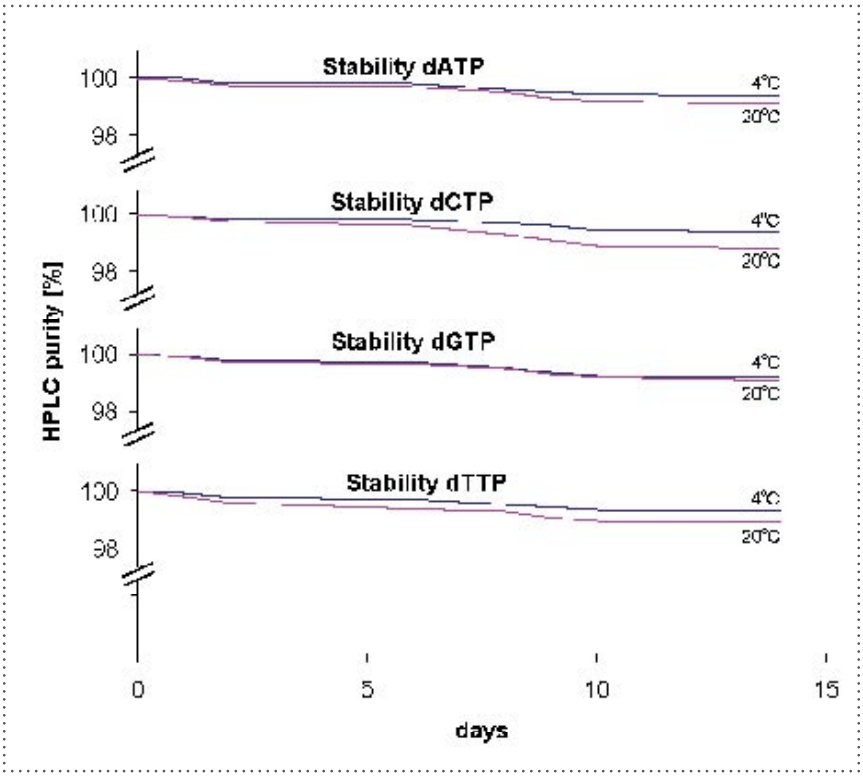
Comparison of the purity of dATP from different suppliers



Besides the main peak of dATP you see a minor peak with a longer retention time which corresponds to dADP. In one suppliers' sample you also see a minor peak with a shorter retention time that corresponds to tetraphosphate, a strong inhibitor of PCR reactions.

Enhanced Stability for a Consistant Performance

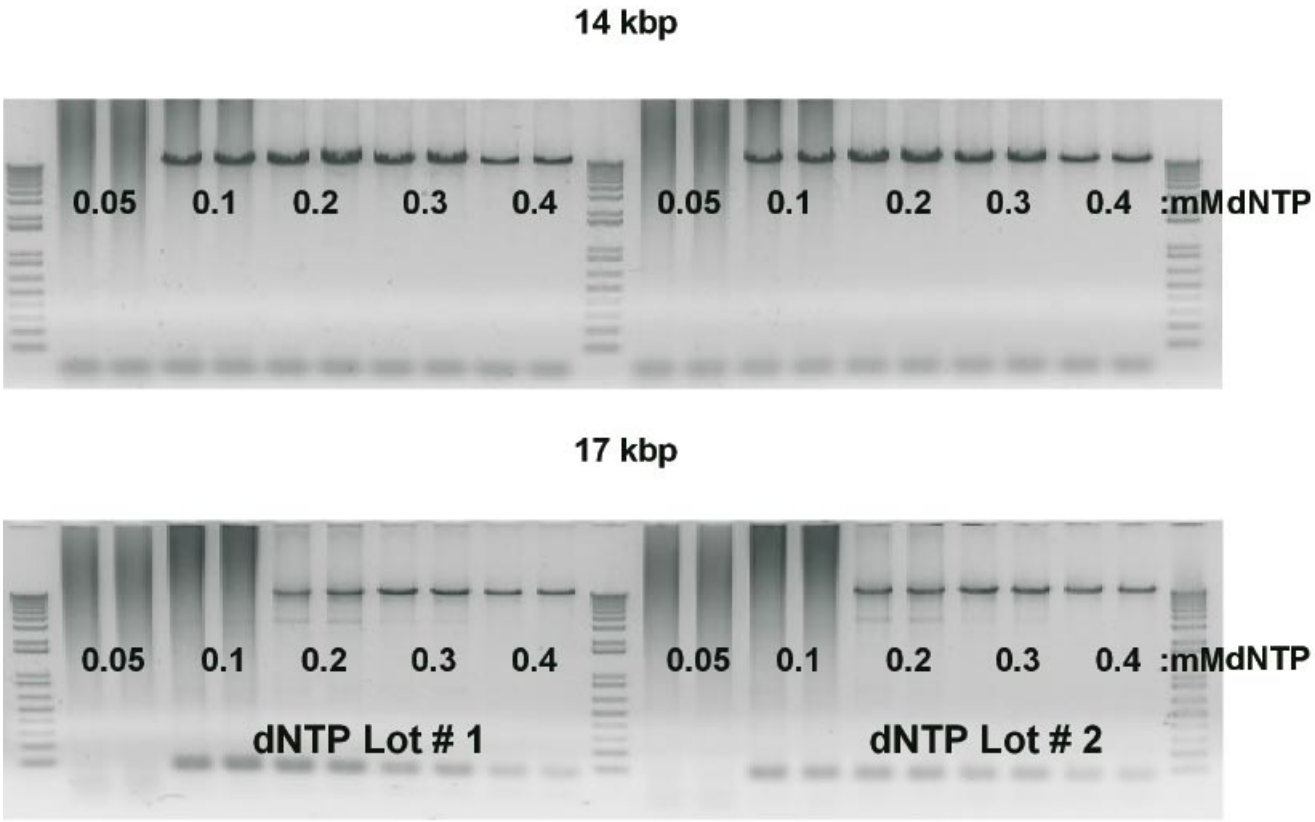
Optimized composition of ROVEXCELLENT dNTPs will provide you with no loss in long range PCR performance during incubation at 20 °C respectively at 4°C over 14 days.



The stability of ROVALAB nucleotides was tested functionally as well as analytically. The functional activity was checked in a 30kb PCR reaction. In the analytical test the chemical purity of the nucleoside triphosphates was determined. If triphosphates are degraded during incubation to diphosphates and monophosphates over time, the compounds can be separated from each other by HPLC and the relative amount of triphosphates (purity) can be determined.

Assured Consistent Quality

At ROVALAB, we opperate according to ISO 9001:2000 and assure you consistency of the lots.



ROVEXCELLENT dNTP dillution test in 14 kbp and 17 kbp PCR;
Enzyme : ROVALAB High Fidelity Taq DNA Polymerase (2.5units/µl);
Template: Human Genomic DNA 100 ng/µl

SPECIFICATION

FUNCTIONAL ASSAYS	SPECIFICATION
Quantitative PCR	
Slope	3.35 and -3.6
Standard Deviation	< 1
Cycle threshold (Ct) for 10 pg	31 and 35
Signal above threshold in the no template control	no signal
30 kb long range PCR	suitable
PHYSICAL ASSAYS	SPECIFICATION
DNA	no contamination detected
DNase, RNase, Protease, Phosphatase Assay	no activity detected
Concentration	95 – 105 mM
Purity by HPLC	> 99%
pH	6.5 - 7.0

ORDERING INFORMATION

	Catalog #	Size
	Nucleotides	
dNTP Set	R 100	4 x 0.25 ml of 100 mM solution
	R 103	4 x 1 ml of 100 mM solution
	R 105	5 x 4 x 0.25 ml of 100 mM solution
	R 110	20 x 4 x 0.25 ml of 100 mM solution
dNTP / dUTP Set	R 170	4 x 0.25 ml of 100 mM solution
dNTP Mix, 25 mM each	R 230	0.5 ml
	R 235	1.0 ml
dNTP Mix, 10 mM each	R 200	0.2 ml
	R 203	1.0 ml
	R 205	5 x 0.2 ml
dNTP Mix, 2 mM each	R 180	1.0 ml
	R 185	5 x 1.0 ml
dNTP / dUTP Mix	R 190	1.0 ml
	R 195	5 x 1.0 ml
RELATED PRODUCTS		
	Master Mixes	
2 x SYBR Green Master Mix	S 100	100 reactions
	S 500	500 reactions
	S 1000	1000 reactions
	S 5000	5000 reactions
2 x PCR Master Mix	R 500	100 reactions
	R 501	500 reactions
2 x Red PCR Master Mix	R 540	100 reactions
	R 541	500 reactions
2 x Hot Start PCR Master Mix	R 530	100 reactions
	R 531	500 reactions
2 x Red Hot Start PCR Master Mix	R 520	100 reactions
	R 521	500 reactions
PCR Flex System	R 511	100 U
	R 512	250 U
	R 513	500 U

RELATED PRODUCTS		
	Catalog #	Size
Polymerases		
Taq DNA Polymerase - Plates, 5 U / µl	Taq P 100	100 U
	Taq P 500	500 U
Taq DNA Polymerase - Tubes, 5 U / µl	Taq T 100	100 U
	Taq T 500	500 U
Red Taq DNA Polymerase, 5 U / µl	Red 5-100	100 U
	Red 5-500	500 U
Red Taq DNA Polymerase, 1 U / µl	Red 1-100	100 U
	Red 1-500	500 U
Hot Start DNA Polymerase, 5 U / µl	HS 100	100 U
	HS 500	500 U
Red Hot Start DNA Polymerase, 5 U / µ	Red HS 100	100 U
	Red HS 500	500 U
Pfu DNA Polymerase, 2.5 U / µl	PF 100	100 U
	PF 500	500 U
High Fidelity DNA Polymerase, 2.5 U/µl	HF 100	100 U
	HF 500	500 U

KONTAKT **Rovalab GmbH**

Hauffstr. 38 | 14513 Teltow | Germany

Tel. +49 3328 301477 | **Fax** +49 3328 301478

www.rovalab.com | info@rovalab.com