

## dNTP/dUTP Mix

**LOT:** See product label

**EXPIRY DATE:** See product label

### ORDERING INFORMATION

CAT. NO.	SIZE	PACKAGE CONTENT
BR0601101	1 ml	1 ml dNTP/dUTP Mix (10 mM dATP, 10 mM dCTP, 10 mM dGTP, 30 mM dUTP)
BR0601102	5 ml	5 × 1 ml dNTP/dUTP Mix (10 mM dATP, 10 mM dCTP, 10 mM dGTP, 30 mM dUTP)

### COMPONENT

### COMPOSITION

dNTP/dUTP Mix

Aqueous solution (pH 7.0) containing  
 2 mM 2'-deoxyadenosine 5'-triphosphate sodium salt,  
 2 mM 2'-deoxycytidine 5'-triphosphate sodium salt,  
 2 mM 2'-deoxyguanosine 5'-triphosphate sodium salt,  
 2 mM 2'-deoxyuridine 5'-triphosphate sodium salt

### STORAGE

-20°C (until expiry date – see product label)

### FEATURES

- Exceptional quality dNTPs of >99% purity confirmed by HPLC
- Free from DNA and PCR inhibitors
- Consistent PCR results due to outstanding dNTPs stability

### APPLICATIONS

- Standard or hot-start PCR
- Long-range and high-fidelity PCR
- cDNA synthesis and RT-PCR
- qPCR
- Sequencing
- DNA labeling

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## DESCRIPTION

biotechrabbit™ deoxynucleotide triphosphates are first-choice nucleotides for all PCR applications, including the most demanding, such as amplification of long targets (up to 40 kb), GC-rich templates, qPCR, cDNA synthesis, high-fidelity PCR, DNA labeling and sequencing.

Advanced production technology ensures that deoxyribonucleotide triphosphates have >99% purity and outstanding stability, ensuring excellent performance and consistent, reliable results.

For the maximum flexibility, nucleotides are available in sets and mixes of common concentrations.

The use of dUTP (dNTP/dUTP Mix or Set) and Uracil–DNA Glycosylase (UDG) helps prevent carry-over contamination. Uracil–DNA Glycosylase degrades DNA containing uracil. After PCR with dUTP, the PCR products are substrates for UDG and any DNA containing uracil is degraded during the brief incubation with Uracil–DNA Glycosylase. This step eliminates contaminating DNA from previous experiments.

## PROTOCOL

### Prevention of PCR contamination

When assembling the amplification reactions, care should be taken to eliminate the possibility of contamination with undesired DNA.

- Use separate clean areas for preparation of samples and reaction mixtures and for cycling.
- Wear fresh gloves. Use sterile tubes and pipette tips with aerosol filters for PCR setup.
- Use only water and reagents that are free of DNA and nucleases.
- With every PCR setup, perform a contamination control reaction that does not include template DNA.

### Typical use of dNTPs

- 0.2 mM of each nucleotide is the recommended final dNTP concentration in common PCR. However, in PCR reactions where the dTTP is replaced by dUTP, typically dUTP concentration is 3× higher than other dNTPs, i.e. 0.6 mM final.
- Every time before the use thaw and mix well each dNTP solution, especially highly concentrated ones.
- Use the ready dNTP/dUTP mixes in PCR according to the guidelines below:

#### Volumes of dNTP mixes for the indicated PCR volume

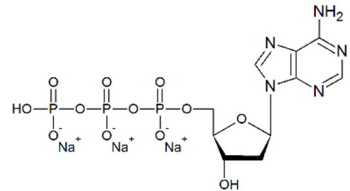
dNTP/dUTP Mix	Used for PCR as	50 µl PCR	25 µl PCR	20 µl PCR
10 mM dNTP, 30 mM dUTP	50×	1 µl	0.5 µl	0.4 µl

DEOXYRIBONUCLEOTIDE  
TRIPHOSPHATE

CHEMICAL FORMULA AND  
MOLECULAR WEIGHT    STRUCTURAL FORMULA

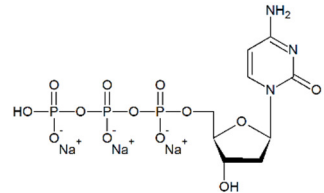
dATP  
2'-deoxyadenosine 5'-  
triphosphate

$C_{10}H_{13}N_5O_{12}P_3Na_3$   
MW 557.2  
(acid form 491.2)



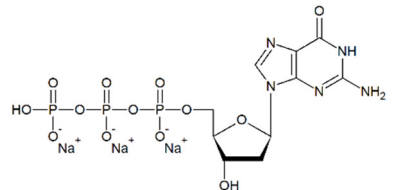
dCTP  
2'-deoxycytidine 5'-  
triphosphate

$C_9H_{13}N_3O_{13}P_3Na_3$   
MW 533.1  
(acid form 467.1)



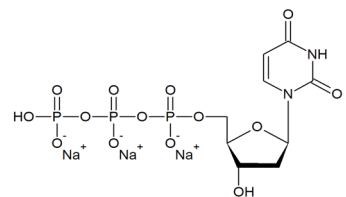
dGTP  
2'-deoxyguanosine 5'-  
triphosphate

$C_{10}H_{13}N_5O_{13}P_3Na_3$   
MW 573.2  
(acid form 507.2)



dUTP  
2'-deoxyuridine 5'-  
triphosphate

$C_9H_{12}N_2O_{14}P_3Na_3$   
MW 534.1  
(acid form 468.1)



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## CERTIFICATE OF ANALYSIS

### Quality Control

### Functional assay

Functionality tested in PCR.

### Purity test

The concentration of each lot is verified by optical density spectrometry. The purity of nucleotide triphosphates is determined by HPLC. The minimum passing specification for the triphosphate content is 99%.

### Contamination test

The absence of human and *E. coli* DNA is confirmed by qPCR.

Quality confirmed by: Head of Quality Control

## SAFETY INSTRUCTIONS

For safety instructions please see Safety Data Sheets (SDS)/Sicherheitshinweise finden Sie in den SDS unter: <http://www.biotechrabb.it.com/support/documentation.html>.

## USEFUL HINTS

- Visit Applications at [www.biotechrabb.it.com](http://www.biotechrabb.it.com) for more products and product selection guides.
- Most biotechrabb.it products are available in custom formulations and bulk amounts.

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### Legal Disclaimer and Product Use Limitation

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valid from 14.12.2017