

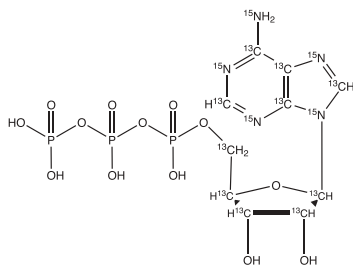
# <sup>13</sup>C, <sup>15</sup>N-Nucleotides from ISOTECH™

**\*All NTP's and dNTP's are supplied as sodium salts in 100mM solution in H<sub>2</sub>O with 5mM Tris HCl buffer**

Isotopic enrichment 98 atom% <sup>13</sup>C, 98 atom% <sup>15</sup>N  
Packaged in 1mg, 10mg, 25mg, and 50mg of free acids

## <sup>13</sup>C, <sup>15</sup>N-Ribonucleotides

### 645702 Adenosine-<sup>13</sup>C<sub>10</sub>, <sup>15</sup>N<sub>5</sub> 5'-Triphosphate



#### Method

<sup>1</sup>H-NMR (FT)  
<sup>13</sup>C-NMR  
UV

<sup>1</sup>H-NMR (FT)  
<sup>15</sup>N enrichment  
Appearance  
DNase/RNase

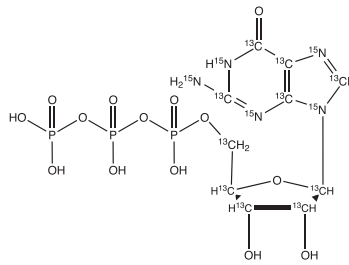
HPLC

pH

#### Specification

structure verification  
structure verification  
report molar concentration of ATP  
( $\epsilon = 15483 \text{ cm}^{-1}\text{M}^{-1}$  at 260nm)  
minimum 98 atom% <sup>13</sup>C  
minimum 98 atom% <sup>15</sup>N  
clear, colorless solution  
report content of DNase/RNase  
\*NONE DETECTED  
minimum 90% ATP vs sum of  
ATP, ADP and AMP  
7

### 645680 Guanosine-<sup>13</sup>C<sub>10</sub>, <sup>15</sup>N<sub>5</sub> 5'-Triphosphate



#### Method

<sup>1</sup>H-NMR (FT)  
<sup>13</sup>C-NMR  
UV

<sup>1</sup>H-NMR (FT)  
<sup>15</sup>N enrichment  
Appearance  
DNase/RNase

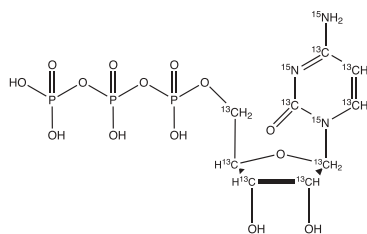
HPLC

pH

#### Specification

structure verification  
structure verification  
report molar concentration of GTP  
( $\epsilon = 13848 \text{ cm}^{-1}\text{M}^{-1}$  at 253nm)  
minimum 98 atom% <sup>13</sup>C  
minimum 98 atom% <sup>15</sup>N  
clear, colorless solution  
report content of DNase/RNase  
\*NONE DETECTED  
minimum 90% GTP vs sum of  
GTP, GDP and GMP  
7

### 645699 Cytidine-<sup>13</sup>C<sub>9</sub>, <sup>15</sup>N<sub>3</sub> 5'-Triphosphate



#### Method

<sup>1</sup>H-NMR (FT)  
<sup>13</sup>C-NMR  
UV

<sup>1</sup>H-NMR (FT)  
<sup>15</sup>N enrichment  
Appearance  
DNase/RNase

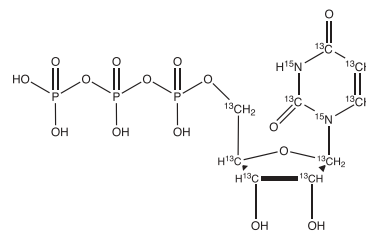
HPLC

pH

#### Specification

structure verification  
structure verification  
report molar concentration of CTP  
( $\epsilon = 9045 \text{ cm}^{-1}\text{M}^{-1}$  at 271nm)  
minimum 98 atom% <sup>13</sup>C  
minimum 98 atom% <sup>15</sup>N  
clear, colorless solution  
report content of DNase/RNase  
\*NONE DETECTED  
minimum 90% CTP vs sum of  
CTP, CDP and CMP  
7

### 645672 Uridine-<sup>13</sup>C<sub>9</sub>, <sup>15</sup>N<sub>2</sub> 5'-Triphosphate



#### Method

<sup>1</sup>H-NMR (FT)  
<sup>13</sup>C-NMR  
UV

<sup>1</sup>H-NMR (FT)  
<sup>15</sup>N enrichment  
Appearance  
DNase/RNase

HPLC

pH

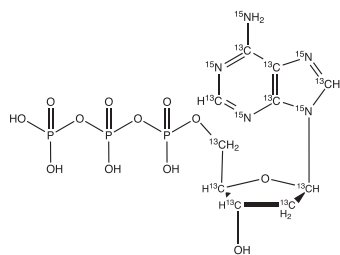
#### Specification

structure verification  
structure verification  
report molar concentration of UTP  
( $\epsilon = 10068 \text{ cm}^{-1}\text{M}^{-1}$  at 262nm)  
minimum 98 atom% <sup>13</sup>C  
minimum 98 atom% <sup>15</sup>N  
clear, colorless solution  
report content of DNase/RNase  
\*NONE DETECTED  
minimum 90% UTP vs sum of  
UTP, UDP and UMP  
7

**To place an order or to request a quote, please contact ISOTECH™ at 1-800-448-9760 (USA) or visit our website at [www.sigma-aldrich.com/isotec](http://www.sigma-aldrich.com/isotec)**

# <sup>13</sup>C, <sup>15</sup>N-Deoxyribonucleotides

## 646237 2'-Deoxyadenosine-<sup>13</sup>C<sub>10</sub>, <sup>15</sup>N<sub>5</sub> 5'-Triphosphate



### Method

<sup>1</sup>H-NMR (FT)

<sup>13</sup>C-NMR

UV

<sup>1</sup>H-NMR (FT)

<sup>15</sup>N enrichment

Appearance

DNase/RNase

Suitability test

HPLC

pH

### Specification

structure verification

structure verification

report molar concentration of dATP

( $\epsilon = 15483 \text{ cm}^{-1}\text{M}^{-1}$  at 260nm)

minimum 98 atom% <sup>13</sup>C

minimum 98 atom% <sup>15</sup>N

clear, colorless solution

report content of DNase/RNase

\*NONE DETECTED

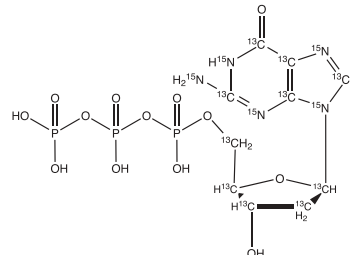
Suitable for use in (PCR)

minimum 90% dATP vs sum of

dATP, dADP and dAMP

7

## 646210 2'-Deoxyguanosine-<sup>13</sup>C<sub>10</sub>, <sup>15</sup>N<sub>5</sub> 5'-Triphosphate



### Method

<sup>1</sup>H-NMR (FT)

<sup>13</sup>C-NMR

UV

<sup>1</sup>H-NMR (FT)

<sup>15</sup>N enrichment

Appearance

DNase/RNase

Suitability test

HPLC

pH

### Specification

structure verification

structure verification

report molar concentration of dGTP

( $\epsilon = 13848 \text{ cm}^{-1}\text{M}^{-1}$  at 250nm)

minimum 98 atom% <sup>13</sup>C

minimum 98 atom% <sup>15</sup>N

clear, colorless solution

report content of DNase/RNase

\*NONE DETECTED

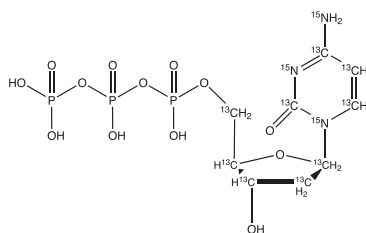
Suitable for use in (PCR)

minimum 90% dGTP vs sum of

dGTP, dGDP and dGMP

7

## 646229 2'-Deoxycytidine-<sup>13</sup>C<sub>9</sub>, <sup>15</sup>N<sub>3</sub> 5'-Triphosphate



### Method

<sup>1</sup>H-NMR (FT)

<sup>13</sup>C-NMR

UV

<sup>1</sup>H-NMR (FT)

<sup>15</sup>N enrichment

Appearance

DNase/RNase

Suitability test

HPLC

pH

### Specification

structure verification

structure verification

report molar concentration of dCTP

( $\epsilon = 9045 \text{ cm}^{-1}\text{M}^{-1}$  at 272nm)

minimum 98 atom% <sup>13</sup>C

minimum 98 atom% <sup>15</sup>N

clear, colorless solution

report content of DNase/RNase

\*NONE DETECTED

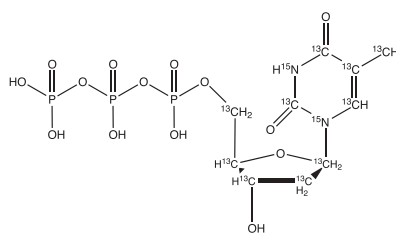
Suitable for use in (PCR)

minimum 90% dCTP vs sum of

dCTP, dCDP and dCMP

7

## 646202 Thymidine-<sup>13</sup>C<sub>10</sub>, <sup>15</sup>N<sub>2</sub> 5'-Triphosphate



### Method

<sup>1</sup>H-NMR (FT)

<sup>13</sup>C-NMR

UV

<sup>1</sup>H-NMR (FT)

<sup>15</sup>N enrichment

Appearance

DNase/RNase

Suitability test

HPLC

pH

### Specification

structure verification

structure verification

report molar concentration of TTP

( $\epsilon = 10149 \text{ cm}^{-1}\text{M}^{-1}$  at 268nm)

minimum 98 atom% <sup>13</sup>C

minimum 98 atom% <sup>15</sup>N

clear, colorless solution

report content of DNase/RNase

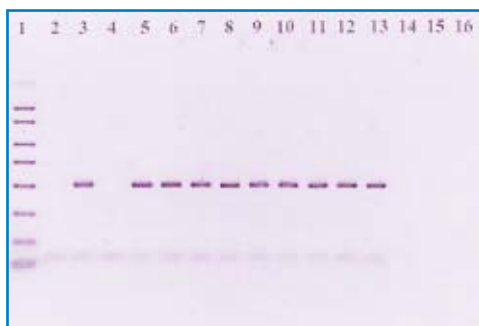
\*NONE DETECTED

Suitable for use in (PCR)

minimum 90% TTP vs sum of

TTP, TDP and TMP

7



### PCR for ISOTEC's dNTP's

- Lane 1: PCR Marker
- Lane 2: D7295, control (-)
- Lane 3: D7295, control (+)
- Lane 4: Individual Nucleotides, control (-)
- Lane 5: Individual Nucleotides, control (+)
- Lane 6&7: ISOTEC dATP
- Lane 8&9: ISOTEC TTP
- Lane 10&11: ISOTEC dCTP
- Lane 12&13: ISOTEC dGTP