

# Certificate of Analysis



|                       |  |
|-----------------------|--|
| <b>Product Name:</b>  | dNTP Mix U   |
| <b>Cat.-No.</b>       | DMIXU_100ML<br>DMIXU_1000ML                                    |
| <b>Contents:</b>      | aqueous solution of sodium salts of dATP, dCTP, dGTP, and dUTP |
| <b>Concentration:</b> | 10 mM dATP, dCTP, dGTP and 20 mM dUTP                          |
| <b>Lot-No.:</b>       | 101.650  |

|                             | Test  | Specification                                 | Results  |
|-----------------------------|---|---|--|
| <b>Biophysical</b>          | Concentration<br>(determined by HPLC at 272 nm)   | 1415 a.u. $\pm$ 71                            | 1468 a.u.  |
|                             | pH (22 °C)  | 8.5 $\pm$ 0.2                                 | 8.5  |
| <b>Purity</b>               | dNTP (C18-RP-UV, 259 nm)<br>(each component separately)   | $\geq$ 99.0 % (area)                          | 99.9% dATP<br>99.9% dCTP<br>99.9% dGTP<br>99.8% dUTP |
|                             | dNDP (C18-RP-UV, 259 nm)<br>(each component separately)   | $\leq$ 0.5 % (area)                           | conforms   |
|                             | NTP (C18-RP-UV, 259 nm)<br>(each component separately)  | $\leq$ 0.1 % (area)                           | conforms   |
| <b>Functional</b>           | Low Copy Long Range PCR<br>(1 kb, lambda DNA, template dilution series)   | PCR fragment with<br>$\leq$ 10 pg of template | 10 pg  |
|                             | Contamination with bacterial DNA (qPCR, 16S rRNA <sup>(1)</sup> )<br>(each component separately)                          | not detectable                                | conforms   |
|                             | Contamination with human DNA (qPCR, beta-actin gene <sup>(2)</sup> )<br>(each component separately)                       | not detectable                                | conforms   |
|                             | DNases, RNases, Nicking Activity, Endo- and<br>Exonucleases, Endodeoxyribonucleases (FRET)<br>(each component separately) | not detectable                                | conforms   |
|                             | Proteases (UV-Vis)<br>(each component separately)   | not detectable                                | conforms   |
| <b>Anions &amp; Cations</b> | Chloride Cl <sup>-</sup> (Anion chromatography)<br>(each component separately)  | $\leq$ 10 mM                                  | conforms   |
|                             | Acetate CH <sub>3</sub> COO <sup>-</sup> (GC/FID)<br>(each component separately)  | $\leq$ 2 mM                                   | conforms   |

|   |                           |          |
|---|---------------------------|----------|
| Magnesium Mg <sup>2+</sup> (ICP-MS)<br>(each component separately)        | ≤ 5 mM                    | conforms |
| Calcium Ca <sup>2+</sup> (ICP-MS)<br>(each component separately)          | ≤ 0.25 mM                 | conforms |
| Total Heavy Metals <sup>(3)</sup> (ICP-MS)<br>(each component separately) | ≤ 5 µg x ml <sup>-1</sup> | conforms |

<sup>(1)</sup> Greisen et al. (1994) J. Clin. Microbiol. 32(2):335

<sup>(2)</sup> Fields et al. (2001) Toxicol. Sci. 63:107

<sup>(3)</sup> Ba, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sn, U

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