



fon:
+49 (0)731 - 3608 123
fax:
+49 (0)731 - 3608 962
eMail:
info@genaxxon.com
internet:
www.genaxxon.com

dNTP Sets and dNTP Mastermixes

Cat #	Description
M3015.4020	Set* of 4 x 20 µmol dATP, dCTP, dGTP, dTTP solution adjusted to pH 8.0. 100mM** Na-salt in 200µL.
M3015.4025	Set* of 4 x 25 µmol dATP, dCTP, dGTP, dTTP solution adjusted to pH 8.0. 100mM** Na-salt in 250µLL.
M3015.4100	Set* of 4 x 100 µmol dATP, dCTP, dGTP, dTTP solution adjusted to pH 8.0. 100mM** Na-salt in 1mL.
M3015.4500	Set* of 4 x 500 µmol dATP, dCTP, dGTP, dTTP solution adjusted to pH 8.0. 100mM** Na-salt in 5 x 1mL.
M3016.0200	Mix of 4 x 10 µmol dATP, dCTP, dGTP, dTTP. 10mM solution adjusted to pH 8.0 (200µL).
M3016.1010	Mix of 4 x 50 µmol dATP, dCTP, dGTP, dTTP. 10mM solution adjusted to pH 8.0 (1mL).
M3017.1002	Mix of 4 x 10 µmol dATP, dCTP, dGTP, dTTP. 2mM solution adjusted to pH 8.0 (1mL).
M3017.5002	Mix of 4 x 50 µmol dATP, dCTP, dGTP, dTTP. 2mM solution adjusted to pH 8.0 (5 x 1mL).

* Each Set contains 4 tubes with separate dATP, dCTP, dGTP and dTTP solutions.

** Each tube contains a solution that is 100mM - 110mM of the respective dNTP.

The tubes are labelled with the catalogue number of the respective dNTPs (dATP = M3018 (with blue cap); dCTP = M3019 (with violet cap); dGTP = M3020 (with red cap); dTTP = M3021 (with green cap))

Description

dNTPs are the building material for DNA molecules and used in various assays based on PCR. The purity of dNTPs is highly important for assay results' accuracy. For that reason the use of highly purified dNTP (as these available from Genaxxon) preparation is particularly recommended for sensitive techniques such as long-range PCR, RT-PCR, multiplex, mutagenesis experiments and Real-Time applications.

Genaxxon offers a complete range of nucleoside-5'-triphosphates in highly purified form in different convenient solutions that are HPLC tested and can be used for in highly sensitive assays. The dNTP mixes are ready-to-use for DNA-polymerisation reactions, all DNA labelling- and sequencing reactions. The dNTP mixes are designed to save time and prevent the possibility for contamination by reducing pipetting steps.

All solutions are prepared using the following substances:

dATP Na₄ x 3 H₂O, 2'-Deoxyadenosine-5'-triphosphate tetrasodium salt. C₁₀H₁₆N₅O₁₂P₃ x Na₄, Cat #: **M3402**
MW = 583.15 g/mol (491.18 g/mol free acid)
 λ_{max} 259nm; ϵ 15.4 λ mmol⁻¹ cm⁻¹ (Tris/HCl, pH7.0)

dCTP Na₄ x 3 H₂O, 2'-Deoxycytidine-5'-triphosphate tetrasodium salt. C₉H₁₆N₃O₁₃P₃ x Na₄, Cat #: **M3401**
MW = 5559.11 g/mol (467.15 g/mol free acid)
 λ_{max} 271nm; ϵ 8.9 λ mmol⁻¹ cm⁻¹ (Tris/HCl, pH7.0)

dGTP Na₄ x 3 H₂O, 2'-Deoxyguanosine-5'-triphosphate tetrasodium salt. C₁₀H₁₆N₅O₁₃P₃ x Na₄, Cat #: **M3403**
MW = 599.14 g/mol (507.18 g/mol free acid)
 λ_{max} 252nm; ϵ 13.7 λ mmol⁻¹ cm⁻¹ (Tris/HCl, pH7.0)

dTTP Na₄ x 3 H₂O, 2'-Deoxythymidine-5'-triphosphate tetrasodium salt. C₁₀H₁₇N₂O₁₄P₃ x Na₄, Cat #: **M3400**
MW = 574.13 g/mol (482.17 g/mol free acid)
 λ_{max} 262nm; ϵ 9.6 λ mmol⁻¹ cm⁻¹ (Tris/HCl, pH7.0)

Purity: each dNTP solution (set and mix): min. 99% (HPLC)

pH: 8.5 +/- 0.1

Storage

dNTPs are stable at -20°C / -70°C in a constant-temperature freezer for at least 24 months.

dNTPs can be kept at RT temperature for a cumulative period of about one week.

Avoid multiple thawing/freezing. For long term usage we recommend to aliquot nucleotides.



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Standard DNA amplification assay

Suggested usage for the Genaxxon dNTP-set and dNTP-Mastermix solutions

Usage

Please prepare a 10mM solution of the dNTPs and use 1µL of the resulting dNTP-solutions for a 50µL PCR reaction. It is also possible to use the Genaxxon dNTP-Mix (M3016) that is prepared as a 10mM ready-to-use Mastermix solution.

Alternatively you can use our M3017 (2mM solution of the dNTPs) and use 5µL for a 50µL PCR reaction.

The 100mM dNTP-Sets have to be diluted before use in PCR reactions.

If a 10mM Mastermix is wanted pipet 100µL of each dNTP (100mM) to one tube and add 600µL of DNase and RNase free water. The final concentration will be 40mM total, respective 10mM of each dNTP.

If a 2mM Mastermix is wanted pipet 20µL of each dNTP (100mM) to one tube and add 920µL of DNase and RNase free water. The final concentration will be 8mM total, respective 2mM of each dNTP.

Mix solution well before further usage. We suggest to aliquote the Mixes to prevent repeated freeze - thaw cycles.

The Genaxxon dNTP ready-to-use solutions are excellent for direct use without any further dilution in DNA synthesis reaction. Just add the dNTP-Mastermixes directly to the reaction mixes as follows.

Table 1: suggested dNTP-Mastermix volumes per PCR reaction (1 mL 10 mM dNTP-Mix (M3016.1010))

Final reaction volume	Added volume of 10 mM dNTP-Mix	Number of PCR reactions
10µL	0.2µL	5000
25µL	0.5µL	2000
50µL	1.0µL	1000
100µL	2.0µL	500

Table 2: suggested dNTP-Mastermix volumes per PCR reaction (1 mL of 2 mM dNTP-Mix (M3017.1002))

Final reaction volume	Added volume of 10 mM dNTP-Mix	Number of PCR reactions
10µL	1.0µL	1000
25µL	2.5µL	400
50µL	5.0µL	200
100µL	10.0µL	100

Notes:

As all dNTP solutions should not be thawed several times, we suggest to prepare aliquots of each solution.

Related Products

Cat #	Description
M3022	100mM dUTP solution. Available in package sizes of 20µmol, 100µmol and 500µmol.
M3096	Uracil-DNA-Glycosylase. Available in package sizes of 200 units and 1000 units.