DNA Polymerase Mix

Catalogue No.:abx461002

Abbexa's DNA Polymerase Mix is a convenient ready-to-go 2X reaction mix designed to maximize experiment reproducibility. It contains DNA Polymerase (abx461001), $MgCl_2$ and ultra-pure dNTPs. The mix is optimized and ready-to-use, simply add water, template and primers. DNA Polymerase Mix (2X) dramatically reduces the time needed to set up reactions, thereby minimizing the risk of contamination. Greater reproducibility is ensured, by a reduction in the number of pipetting steps that can lead to pipetting errors. The 500 rxns size is provided as 10 × 1.25 ml DNA Polymerase Mix, and 1.2 ml 50 mM $MgCl_2$ solution for optional optimization of reaction conditions.

Target:	DNA Polymerase Mix
Tested Applications:	PCR
Form:	Liquid
Biological Activity:	One unit is defined as the amount of enzyme that incorporates 10 nmol of dNTPs into acid-insoluble form in 30 minutes at 72 °C.
Storage:	Store all components at -20°C. It is not recommended to store the enzyme at -80°C as ice crystals may form on the active site, which can affect the enzyme activity. Avoid repeated freeze/thaw cycles.
Validity:	Up to 12 months.
Buffer:	The DNA Polymerase Mix (2X) contains 4 mM Mg^{2+}.
Concentration:	2X
Note:	THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC, THERAPEUTIC OR COSMETIC PROCEDURES. NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Abbexa LTD, Cambridge, UK · Phone: +44 (0) 1223 755950 · Fax: +44 (0) 1223 755951
Abbexa LLC, Houston, TX USA · Phone: +1 832 327 7413
Abbexa BV, Leiden, NL
Website: www.abbexa.com · Email: info@abbexa.com

Directions for use:

Reaction Components:

Component	Volume
Template	Variable, as required
Primers (20 µM each)	1 µl
DNA Polymerase Mix (2X)	25 µl
Water	Variable, up to 50 µl
Total Volume	**50 µl**

Thermal Cycling Conditions:

Step	Number of Cycles	Temperature	Time per Cycle
Initial Denaturation	1 cycle	95-98 °C	3 min
Denaturation	25-35 cycles	95-98 °C	15 seconds
Annealing		55-60 °C (primer dependent)	15 seconds
Extension		72 °C	1.5-2 kb/min

Notes:

• The 2X mix contains 4 mM Mg^{2+} (final concentration 2 mM Mg^{2+}), which is sufficient for amplification of most targets and should only be adjusted if necessary.

• Forward and reverse primers are generally used at a final concentration of 0.2-0.6 µM each. It is recommended to start with 0.4 µM as the final concentration (i.e. 20 pmol of each primer per 50 µl reaction volume). A primer concentration that is too high can reduce the specificity of priming, resulting in non-specific products. Primers should have a melting temperature (T_m) of approximately 60 °C.

• The amount of template in the reaction depends mainly on the type of DNA used. For templates with low structural complexity, such as plasmid DNA, it is recommended to use 50 pg-10 ng DNA per 50 µl reaction volume. For eukaryotic genomic DNA, it is recommended to use a starting amount of 200 ng DNA per 50 µl reaction, this can be varied between 5 ng - 500 ng. It is important to avoid using templates re-suspended in EDTA-containing solutions (e.g. TE buffer) since EDTA chelates free Mg^{2+}.

Abbexa LTD, Cambridge, UK · Phone: +44 (0) 1223 755950 · Fax: +44 (0) 1223 755951
Abbexa LLC, Houston, TX USA · Phone: +1 832 327 7413
Abbexa BV, Leiden, NL
Website: www.abbexa.com · Email: info@abbexa.com