



Technical Data Sheet

GENERAL INFORMATION

PRODUCT *Taq* DNA Polymerase, expressed in yeast. Lyophilized.

Cat. No. MT01U-L1TAQPXA

UNITS 1,000 U

DESCRIPTION *Taq* DNA Polymerase is a highly thermostable DNA polymerase from the thermophilic bacterium *Thermus aquaticus*. This enzyme catalyzes the synthesis of new DNA strands by adding nucleotides in the 5' → 3' direction; while it lacks 3'→5' exonuclease activity. In addition, *Taq* Polymerase exhibits deoxynucleotidyl transferase activity, which frequently results in the addition of extra adenines at the 3'-end of PCR products. *Taq* DNA Polymerase withstand high temperatures, making it suitable for PCR amplification in thermocycling processes.

This product is free from *E. coli* DNA contaminants. This lyophilized product is a freeze-dried version of its well-characterized liquid equivalent.

PRODUCTS PROVIDED

<u>Component</u>		<u>Amount</u>
01U-L1TAQPXA	<i>Taq</i> DNA Polymerase. Lyophilized.	1 vial

DELIVERY CONDITIONS

01U-L1TAQPXA 1,000 U of freeze-dried *Taq* DNA Polymerase.

SHIPPING CONDITIONS This lyophilized product can be handled and stored at room temperature for at least 24 months.

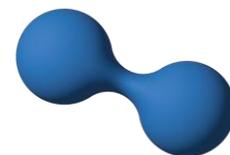
SUGGESTED RECONSTITUTION BUFFERS 20 mM Tris pH 7.5, 300 mM KCl, 0.1 mM EDTA, 1 mM DTT, 0.05% Tween, 50% (v/v) glycerol*.

*Glycerol is recommended for enhanced stability; however, it may be omitted for specific applications.

RECONSTITUTION INSTRUCTIONS

1. Add 200 µL of the suggested Reconstitution Buffer to reconstitute the enzyme at 5 U/µL.
2. Gently pipette up and down to dissolve the solid powder.
3. Place on ice and aliquot into smaller volumes to avoid multiple freeze/thaw cycles.
4. Store from -20 °C to -80 °C.





STORAGE CONDITIONS

This lyophilized product can be handled and stored at Room Temperature for at least 24 months. After reconstitution in a glycerol-containing buffer, the shelf life is 12 months if stored from -20 °C to -80 °C. Short-term storage at 4 °C is possible. To avoid multiple freeze/thaw cycles, store in multiple aliquots.

SUGGESTED 10X REACTION BUFFER

200 mM Tris pH 8.8, 250 mM KCl, 15 mM MgCl₂, 10 mM DTT, 0.1% Tween, 5 mg/mL rBSA.

ADDITIONAL INFORMATION

ACTIVITY UNIT DEFINITION

One unit of activity is defined as the amount of enzyme needed to incorporate 15 nmol of dNTPs (deoxyribonucleotides) into a DNA fragment, in 30 minutes at 72 °C.

RECOMMENDED REACTION CONDITIONS

1. Gently vortex and briefly centrifuge all solutions.
2. Prepare the following mix on ice.

Component	Final concentration
10X <i>Taq</i> DNA Polymerase Reaction Buffer	1X
dNTPs, 10 mM each	0.2 mM each dNPT
10 μM Forward Primer	0.1-1 μM
10 μM Reverse Primer	0.1-1 μM
Template DNA	<0.5 μg/50 μL
<i>Taq</i> DNA Polymerase	5 U/50 μL
Nuclease-free water	To 50 μL

3. Transfer tubes from ice to a PCR machine with a preheated lid to 95 °C. If using a thermocycler without a heated lid, overlay the reaction mixture with mineral oil to prevent evaporation.
4. Perform PCR using recommended thermal cycling conditions:

Step	Temperature	Time	Number of cycles
Initial denaturation	95 °C	3 min	1
Denaturation	95 °C	30 s	
Annealing	42-65 °C*	30 s	25-35
Extension	72 °C	1 min/kb	
Final extension	72 °C	5 min	1

*Annealing temperature should be optimized for each primer set based on primer T_m.





QUALITY CONTROL

To perform quality control of the protein, it is first resuspended in the suggested reconstitution buffer, which also serves as a negative control in the quality control process.

Taq DNA POLYMERASE ACTIVITY

Taq DNA Polymerase activity is measured for each batch to verify that the resulting units are the same to the reference units, with an accepted 8% deviation.

E. coli DNA CONTAMINATION

5 U of *Taq* DNA Polymerase is screened for the presence of the specific gene *ybbW* from *Escherichia coli*.¹ A C_q value higher than 35 is accepted.

¹Walker, David I., *et al.* "A highly specific *Escherichia coli* qPCR and its comparison with existing methods for environmental waters." *Water research* 126 (2017): 101-110.

TECHNICAL SUPPORT

If you have any questions, feel free to contact us at support@levprot.com

Consult the Safety Data Sheet for information regarding hazards and safe handling practises.

THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.

DATE 16/05/2025

REVISION 05

