Ultra-Pure Taq DNA Polymerase 1.2

For research use only

Catalogue Numbers: UT052S, UT052, UT252, UTN052S, UTN052, UTN252

Quantity: 50 U, 500 U, 2500 U

Unit Definition: 1 U incorporates 10 nmole of dNTP into acid insoluble products in 30 minutes at 74ºC

Storage Buffer: 20 mM Tris-HCl pH8.0, 0.1 mM EDTA, 1 mM DTT, 1.0% Triton X-100, 50% Glycerol

10X PCR Buffer: 200 mM Tris-HCl pH8.8 at 25ºC, 100 mM KCl, 100 mM $(NH_4)_2SO_4$, 20 mM $MgSO_4$, 1.0% Triton X-100

$MgSO_4$: premixed with 10X PCR Buffer

Storage: -20ºC for extended periods

3' to 5' Exonuclease Poofreading Abiliy: NO

5' to 3' Exonuclease Activity: YES

Introduction

Ultra-Pure Taq DNA Polymerase is a thermostable enzyme which is purified to reduce levels of contaminating DNA, making it well suited for PCR and sensitive experiments using bacterial templates or random primers. The high purity of this Taq DNA Polymerase makes it ideal in detecting and identifying bacterial DNA, and is a more accurate method for mutation scanning techniques while preventing the amplification of undesired DNA sequences. Ultra-Pure Taq DNA Polymerase is suitable for work in bacterial genomics due to the reduced probability of contamination leading to non-specific amplification or artifacts during PCR reactions. The amplified products are up to 8 kb with 3' adenosine residues and are ready to use directly in TA cloning.

Quality Control

Ultra-Pure Taq DNA Polymerase is tested on a lot-to-lot basis. Quality control assays include activity test, PCR, endonuclease activity, exonuclease activity.

Caution

During the procedure, always wear a lab coat, disposable gloves, and protective goggles

Components

Component	UT052S/UTN052S	UT052/UTN052	UT252/UTN252
Ultra-Pure Taq DNA Polymerase	50 U	500 U	2500 U
10X PCR Buffer (20 mM $MgSO_4$)	100 µl	2 ml	2 ml x 5
dNTPs (10 mM each)	NA/20 µl	NA/0.2 ml	NA/1 ml

General PCR Reaction Set Up

All reaction components should be prepared on ice or in a biocooler then quickly transferred to a thermal cycler pre-heated to 94ºC. For added convenience and to prevent pipetting errors, combine the reaction components in a PCR master mix then aliquot several reactions in parallel PCR tubes. Storage Buffer contains 50% Glycerol so Ultra Pure Taq DNA Polymerase does not require thawing when removed from -20ºC storage.

1. Allow components to thaw then vortex gently and spin down.
2. Remove Ultra Pure Taq DNA Polymerase from -20ºC storage and spin down.
3. Add the following components to a PCR tube or tubes.

Template DNA	Variable	< 500 ng
Upstream Primer (10 µM)	0.5-2.5 µl	0.1-0.5 µM
Downstream Primer (10 µM)	0.5-2.5 µl	0.1-0.5 µM
dNTP mix (10 mM each)	1 µl	200 µM each
10X PCR Buffer	5 µl	2 mM $MgSO_4$
Ultra-Pure Taq DNA Polymerase	0.25 µl	1.25 U
ddH_2O	Add to 50 µl	
Final Volume	50 µl	

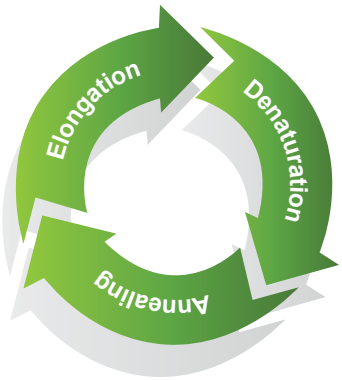
4. Proceed to thermal cycling program on page 2.

General Taq DNA Polymerase Thermal Cycling Program

Please read the entire instruction manual prior to starting the thermal cycling program.

Step 1 Initial Denaturation	• 92ºC-95ºC (94ºC is the standard denaturation temperature). Denaturation condition varies depending on thermal cycler and tube. • 2-5 minutes.
Step 2 Denaturation	• 94ºC. • 20-40 seconds.
Step 3 Annealing	• 55ºC-65ºC. • 30-60 seconds. • Optimal annealing temperature is dependent on the Tm value of the primers and the reaction condition.
Step 4 Elongation	• 72ºC. • 1-3 minutes. • For 1 kb of PCR product, elongate at 72ºC for 1 minute. • For PCR products larger than 2 kb, adjust elongation time based on product size (1 kb/minute).
Step 6 Final Elongation	• 72ºC • 7 minutes
Step 7 Cooling	• 4ºC

25-35 Cycles



Related PCR Products

PCR		
Product	Package Size	Catalogue Number
Ultra-Pure Taq DNA Polymerase	500/2500 U	UT050/250
Ultra-Pure Taq DNA Polymerase w/ dNTPs	500/2500 U	UTN050/250
Ultra-Pure Taq DNA Polymerase 1.1	500/2500 U	UT051/251
Ultra-Pure Taq DNA Polymerase 1.1 w/ dNTPs	500/2500 U	UTN051/251
Ultra-Pure Taq DNA Polymerase 1.2	500/2500 U	UT052/252
Ultra-Pure Taq DNA Polymerase 1.2 w/ dNTPs	500/2500 U	UTN052/252
HiFi Taq DNA Polymerase	500 U	HT050
Ultra-Pure Taq PCR Master Mix	200/400 rxns	UTM200/400
Ultra-Pure Taq PCR Master Mix with Dye	100 rxns	TQMD100
dNTP Solution	10 mM each, 200 µl	DN200
dNTP Solution	25 mM each, 1 ml	DN1100
dNTP Set	100 mM 1 ml x 4	DN4400
dCTP	100 mM, 1 ml	DC1000
dATP	100 mM, 1 ml	DA1000
dGTP	100 mM, 1 ml	DG1000
dTTP	100 mM, 1 ml	DT1000