Platinum® *Taq* DNA Polymerase High Fidelity

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Print Options

Package Contents

Catalog Number	Size
11304-011	100 rxns
11304-029	500 rxns
11304-102	5,000 rxns

Kit Contents

Storage Conditions

- Store all contents at -20°C.

Required Materials

- Template: cDNA, gDNA, λDNA
- Forward and reverse gene-specific primers
- 10 mM dNTP mix (Cat. no. 18427-088)
- Autoclaved, distilled water
- E-Gel® General Purpose Gels, 1.2% (Cat. no. G5018-01)
- TrackIt™ 1 Kb Plus DNA Ladder (Cat. no. 10488-085)
- 0.2 or 0.5-mL nuclease-free microcentrifuge tubes

Timing

Varies depending on amplicon length

Selection Guide

PCR Enzymes and Master Mixes
Go online to view related products.

Product Description

- Platinum® *Taq* DNA Polymerase High Fidelity contains recombinant *Taq* DNA polymerase, *Pyrococcus species* GB-D polymerase, and Platinum® *Taq* Antibody.
- This enzyme allows amplification of simple and complex DNA templates over a large range of target sizes and provides 6X higher fidelity over *Taq*.
- Activity is restored after the denaturation step in PCR cycling at 94°C, providing an automatic "hot start" and offering increased sensitivity, specificity, and yield, while allowing assembly of reactions at room temperature.

Important Guidelines

- Select the correct polymerase, PCR instrument, and cycling conditions for your application.
- Take precautions to avoid cross-contamination by using aerosol-resistant barrier tips and analyzing PCR products in a separate area from PCR assembly.
- For gDNA or cDNA, use a primer concentration of 0.2 µM. For Plasmid or λDNA, increase to 0.4 µM.
- Do not perform the initial denaturation for more than 30 seconds if the target is greater than 12 kb.

Online Resources

Visit our product page for additional information and protocols. For support, visit www.lifetechnologies.com/support.

For Research Use Only. Not for use in diagnostic procedures.

Enzyme Characteristics

Hot-start: Antibody
Length: Up to 20 kb
Fidelity vs. *Taq*: 6X
Format: Separate components

PCR Reaction Setup

Use the measurements below to prepare your PCR experiment, or enter your own parameters in the column provided.

Component	25-µL rxn	50-µL rxn	Custom	Final Conc.
Autoclaved, distilled water	to 25 µL	to 50 µL	to µL	–
10X High Fidelity PCR Buffer	2.5 µL	5 µL	µL	1X
50 mM $MgSO_4$	1 µL	2 µL	µL	2.0 mM
10 mM dNTP Mix	0.5 µL	1 µL	µL	0.2 mM each
10 µM forward primer	0.5 µL	1 µL	µL	0.2 µM
10 µM reverse primer	0.5 µL	1 µL	µL	0.2 µM
Template DNA	varies	varies		< 500 ng
Platinum® *Taq* DNA Polymerase High Fidelity (5 U/µL)	0.1 µL	0.2 µL	µL	1 U/rxn

PCR Protocol

See page 2 to view a procedure for preparing and running your PCR experiment.

Optimization Strategies

Refer to the pop-up for guidelines to optimize your PCR reactions.

Limited Warranty, Disclaimer, and Licensing Information

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Platinum® *Taq* DNA Polymerase High Fidelity Protocol

The example PCR procedure below shows appropriate volumes for a single **50-µL** reaction. For multiple reactions, prepare a master mix of components common to all reactions to minimize pipetting error, and then dispense appropriate volumes into each 0.2–0.5 mL PCR reaction tube prior to adding template DNA and primers.

Timeline	Steps	Procedure Details
1 	**Thaw reagents**	Thaw, mix, and briefly centrifuge each component before use
2 	**Prepare PCR master mix**	Add the following components to each PCR reaction tube. **Note:** Consider the volumes for all components listed in steps 2 and 3 to determine the correct amount of water required to reach your final reaction volume.
3 	**Add template DNA and primers**	Add your template DNA and primers to each tube for a final reaction volume of 50 µL.
4 	**Incubate reactions in a thermal cycler**	Cap each tube, mix, and then briefly centrifuge the contents.
5 	**Analyze with gel electrophoresis**	Analyze 10 µL using agarose gel electrophoresis. Use your PCR reaction immediately for down-stream applications, or store it at -20°C.

Component	50-µL rxn	Final Concentration
Autoclaved, distilled water	to 50 µL	
10X High Fidelity PCR Buffer	5 µL	1X
10 mM dNTP mix	1 µL	0.2 mM each
50 mM $MgSO_4$	2 µL	2 mM
Platinum® *Taq* DNA High Fidelity Polymerase (5 U/µL)	0.2 µL	1 U*

* 1 U is sufficient for amplifying most targets. In some cases, more enzyme may be required (up to 2.5 units). Use 1 U of enzyme for targets > 12 kb.

Mix and briefly centrifuge the components.

Component	50-µL rxn	Final Concentration
10 µM forward primer	1–2 µL	0.2 µM (Genomic and cDNA)– 0.4 µM (Plasmid and λDNA)
10 µM reverse primer	1–2 µL	0.2 µM (Genomic and cDNA)– 0.4 µM (Plasmid and λDNA)
Template DNA	varies	< 500 ng

Step		Temperature (°C)	Time
Initial Denaturation		94	30 seconds–2 minutes*
25–35 PCR Cycles	Denature	94	15 seconds
	Anneal	~55 (depending on primer T_m)	30 seconds
	Extend	68	1 minute/kb
Hold		4	indefinitely

* For targets > 12 kb, do not exceed 30 seconds for initial denaturation.