Invitrogen™ Platinum™ *Taq* DNA Polymerase, DNA-free

invitrogen

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Print Options

Package contents

Catalog number	Size
EP1530DFSMP	800 rxns

Kit contents

Storage conditions

- Store all contents at –20°C.

Required materials

- Template: cDNA, gDNA
- Forward and reverse gene-specific primers
- Invitrogen™ 10 mM dNTP mix (Cat. No. 18427-088)
- Water, nuclease-free
- 0.2-mL or 0.5-mL nuclease-free microcentrifuge tubes
- *for qPCR*:
  100 µM qPCR probe
  ROX Reference Dye
- *for PCR*:
  Invitrogen™ E-Gel™ General Purpose Gels, 1.2% (Cat. No. G5018-01)
  Invitrogen™ TrackIt™ 1 kb Plus DNA Ladder (Cat. No. 10488-085)

Timing

Varies depending on amplicon length

Product description

- Invitrogen™ Platinum™ *Taq* DNA Polymerase, DNA-free is manufactured using closed and single-use system technology to minimize DNA contamination risk.
- Platinum™ *Taq* DNA Polymerase, DNA-free is a recombinant *Taq* polymerase complexed with a proprietary antibody that blocks polymerase activity at ambient temperatures.
- Activity is restored after the initial denaturation step in PCR cycling at 94°C, providing an automatic "hot start" and offering increased sensitivity, specificity, and yield, while allowing reaction assembly at room temperature.
- This enzyme has a non-template-dependent, terminal transferase activity that adds a single deoxyadenosine (A) to the 3' ends of PCR products.
- Like standard *Taq*, it has both 5' to 3' polymerase and 5' to 3' exonuclease activities, but lacks 3' to 5' exonuclease activity.

Important guidelines

Click here for important PCR guidelines.

Online resources

Visit our thermofisher.com/dna-free for additional information.

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

Enzyme characteristics

Hot-start:	Antibody
Length:	Up to 4 kb
Fidelity vs. *Taq*:	1X
Format:	Separate components

qPCR setup

Use the measurements below to prepare your qPCR experiment, or enter your own parameters in the column provided. For PCR set-up, see page 2.

Component	25-µL rxn	Custom	Final conc. in 25-µL rxn
Water, nuclease-free	to 25 µL	to µL	—
10X PCR Buffer (– $MgCl_2$), DNA-free	2.5 µL	µL	1X
50 mM $MgCl_2$, DNA-free	0.75 µL	µL	1.5 mM
10 mM dNTP mix	0.5 µL	µL	0.2 mM each
10 µM forward primer	0.75 µL	µL	0.3 µM
10 µM reverse primer	0.75 µL	µL	0.3 µM
100 µM qPCR probe	0.05 µL	µL	0.2 µM
30 µM ROX Reference Dye	0.025 µL	µL	30 nM[1]
Template DNA	varies	µL	≤500 ng/rxn
Platinum™ *Taq* DNA Polymerase, DNA-free (5 U/µL)	0.25 µL	µL	1.25 U/rxn

[1] The recommended final ROX concentration depends on the instrument (see "Important guidelines").

PCR protocol

See page 2 and page 3 for instructions to prepare and run your PCR experiment.

Optimization strategies

Click here for guidelines to optimize your PCR experiment.

Purchaser notification

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The example procedure below shows appropriate volumes for a single **25-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 tube or well of a MicroAmp™ EnduraPlate™ Optical 96- or 384-well plate prior to adding template DNA and primers. For 384-well plates, we recommend a maximum reaction volume of 10 µL per well.

Step 1 — Thaw reagents

Thaw, mix, and briefly centrifuge each component before use.

Step 2 — Prepare PCR master mix

a. Add the following components to each PCR 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.

Component	25-µL rxn	Custom	Final conc.
Water, nuclease-free	to 25 µL	µL	—
10X PCR Buffer (– $MgCl_2$), DNA-free	2.5 µL	µL	1X
50 mM $MgCl_2$, DNA-free	0.75 µL	µL	1.5 mM
10 mM dNTP mix	0.5 µL	µL	0.2 mM each
Platinum™ *Taq* DNA Polymerase, DNA-free (5 U/µL)	0.25 µL	µL	1.25 U/rxn

b. Mix and then briefly centrifuge the components.

Step 3 — Add template DNA and primers

a. Add your template DNA and primers to each tube for a final reaction volume of 25 µL.

For qPCR[1]:

Component	25-µL rxn	Custom	Final conc.
10 µM forward gene-specific primer	0.75 µL	µL	0.3 µM
10 µM reverse gene-specific primer	0.75 µL	µL	0.3 µM
100 µM qPCR probe	0.05 µL	µL	0.2 µM
30 µM ROX Reference Dye	0.025 µL	µL	30 nM[2]
Template DNA	varies	µL	≤500 ng/rxn (human gDNA)

[1] See "Optimization strategies", page 1.

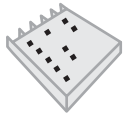
[2] The recommended final ROX concentration depends on the instrument (see "Important guidelines", page 1).

For PCR[1]:

Component	25-µL rxn	Custom	Final conc.
10 µM forward gene-specific primer	0.5 µL	µL	0.2 µM
10 µM reverse gene-specific primer	0.5 µL	µL	0.2 µM
Template DNA	varies	µL	≤500 ng/rxn (human gDNA)

[1] See "Optimization strategies", page 1.

b. Cap each tube, mix, and then briefly centrifuge the contents.

Step	Action	Procedure details
4 	**Incubate reactions in a thermal cycler**	**qPCR cycling parameters (Two-step cycling protocol):** Initial denaturation: 94°C, 2 minutes 25–40 PCR cycles: Denature: 94°C, 30 seconds; Anneal/Extend[1]: ~60°C (depending on primer T_m), 1 minute [1] Data acquisition should be performed during the annealing/extension step for probe-based assays. **qPCR cycling parameters (Three-step cycling protocol):** Initial denaturation: 94°C, 2 minutes 25–40 PCR cycles: Denature: 94°C, 30 seconds; Anneal: ~60°C (depending on primer T_m), 30 seconds; Extend[1]: 72°C, 30 seconds [1] Data acquisition should be performed during the extension step for probe-based assays. **PCR cycling parameters:** Initial denaturation: 94°C, 2 minutes 25–40 PCR cycles: Denature: 94°C, 30 seconds; Anneal: ~60°C (depending on primer T_m), 30 seconds; Extend: 72°C, 1 minute/kb Hold: 4°C, hold
5 	**Analyze results**	**a.** Analyze results following your real-time instrument manufacturer's guidelines. **b.** You can check the specificity of the PCR/qPCR products by agarose gel electrophoresis. Before loading, add gel loading buffer to 10 µL of the PCR/qPCR sample, mix, and briefly centrifuge the contents. **c.** You can store your samples overnight at 2–8°C, or at –20°C for longer period.