amfiXpand Taq DNA Polymerase

P0330

Storage

Store at -20°C in a constant temperature freezer.

Contents

- Product Manual
- ***amfiXpand*** Taq DNA Polymerase, 1u/ul
- ***amfiXpand*** 2X Reaction Buffer

Shipping Condition

Ship with ice pack and dry ice.

Introduction

amfiXpand Taq DNA Polymerase provides superior yield in both routine and challenging PCR application. ***amfiXpand*** Taq DNA Polymerase is composing of a unique enzyme blend containing two thermo stable polymerases: Taq DNA Poly -merase and a thermostable polymerase with proofreading activity. ***amfiXpand*** Taq DNA Polymerase is designed to amplify fragments up to 5kb with high yield and fidelity, as well as with high specificity from episomal and genomic DNA. In addtion a ***amfiXpand*** 2X Reaction Buffer including dNTPs and Mg++ minimizes reagent handling steps and reduces the risk of contamination. For added conve -nience, ***amfiXpand*** Taq DNA Polymerase contains red and yellow loading dyes to allow loading PCR product directly on a gel after thermal cycling, minimizing pipetting steps and providing easy visualization of sample. The red dye runs in a range between 500bp (2% gel) and 1,500bp (0.8% gel) and the yellow dye runs at less than 10bp. ***amfiXpand*** 2X Reaction buffer contains fixed $MgCl_2$ concentration of 1.75mM. However, higher concentrations may be achieved by adding additional $MgCl_2$.

Note: $MgCl_2$ is included in the 2X Reaction Buffer at a final concentration of 1.75mM, which is sufficient for most targets. For some targets, more Mg^{2+} may be required.

Components for each reaction

1 ul/rxn ***amfiXpand*** Taq DNA Polymerase, Reaction Buffer, 1.75mM $MgCl_2$, 0.2mM of dGTP, 0.2mM dATP, 0.2mM dTTP, 0.2mM dCTP, stabilizers, and red and yellow loading dyes.

Unit Definition

One unit is defined as the amount of the enzyme required to catalize the incor -poration of 10nmol of dNTPs into an acid insoluble form in 30 min at 72°C.

Quality Control

PCR, Activity, endonuclease/nickage, Specific performance test.

Protocol

1. Gently vortex and briefly centrifuge all solutions after thawing. Keep the following components on ice.
2. Add the following components to a thin-wall sitting on ice.

Description	Volume	Final Conc.
amfiXpand 2X Reaction Buffer	12.5 ul	1X
Forward primer, 10uM	0.25-2.5 ul	0.1-10. uM
Reverse primer, 10uM	0.25-2.5 ul	0.1-1.0 uM
DNA Template	1.-5 ul	<1 ug
amfiXpand Taq DNA Polymerase	1 ul	1 U
Nuclease free water to	25 ul	N.A.

Note: Use DMSO for a difficult GC-rich template. Optimal DMSO concentration must be determined by titration in 1% increments for each primer-template set. See Critical Optimi -zation Parameter for DMSO concentration range recommendations for specific targets.

3. Gently Vortex and spin down to collect drops.
4. When using the thermal cycler without a heated lid, overlay the reaction mixture with one-half volume of mineral oil.
5. Perform 25-40 cycles of PCR amplification.

Note: Cycling Parameters.

Segment	Number of cycle	Temperature	Duration
1	1	94 °C	2 min
2	25-40	94 °C	2 min
		Primer Tm - 5 °C	0.5-1 min
		72 °C	1 min per kb
3	1	72 °C	10 min

This cycling Parameter serves as a guideline for PCR amplification. Optimal reaction condition such as PCR cycles, annealing temperature, extension temperature, and predenaturation time and temperature may vary and must be individually determined.

6. Place the PCR tubes in the thermal cycler and start the cycling programs.

Product Selection Guide

Description	Cat No
amfiSure Taq DNA Polymerase Mix, 1 unit/ul	P0323
amfiSure GC-Rich DNA Polymerase	P0324
amfiSure CloneEasy DNA Polymerase	P0325
amfiXpand PCR Master Mix	P0330

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