

ThermoPrime ReddyMix™ PCR Kit

Description: An ultrapure recombinant thermostable DNA polymerase obtained by high level expression of the *Taq* DNA polymerase gene in *E. coli*. The enzyme exhibits enhanced thermal stability at DNA denaturation temperatures and can be shipped at ambient temperature with no loss of activity. It is licensed and optimised for use in the Polymerase Chain Reaction (PCR) process.

ReddyMix™ PCR Buffer has an inert red tracker dye and a precipitant added. After thermal cycling a sample (10–30%) of the PCR mix may be loaded directly onto an agarose gel without the addition of gel loading buffer. The dye migrates between bromophenol blue and xylene cyanol at approximately 300bp, depending on agarose concentration.

Enzyme Source: *Thermus aquaticus*

Concentration: 5 units/μl

Unit Definition: One unit of enzyme is defined as the amount that will incorporate 10nmoles of dNTPs into acid insoluble material in 30 minutes at 74°C under the analysis conditions below.

Associated Activities: ThermoPrime has 5' to 3' polymerization and exonuclease activity but lacks 3' to 5' exonuclease activity (proofreading).

Kit Contents:

Vial (cap color)	Pack Size	
	A	B
ThermoPrime (clear)	50μl	10 x 50μl
ReddyMix™ Buffer IV (blue)	1.25ml	10 x 1.25ml
MgCl ₂ (clear)	1.25ml	10 x 1.25ml
dNTP Mix (brown)*	0.5ml	3 x 1.6ml

*contains 5mM of each dNTP (dATP, dGTP, dCTP and dTTP)

For Research Purposes Only

**Storage
Conditions:**

Store thermostable DNA polymerase at -20°C. Shipped on ice within the UK and on dry ice for international and within the US.

**Example of
Protocol:**

Mix and spin down the solutions prior to use

	Volume	Final Concentration 1X
10X ReddyMix™ Buffer	2.5µl	1X
dNTP Mix (20mM)	1µl	0.2mM of each nucleotide
MgCl ₂ (25mM)	1.5µl*	1.5mM*
Primer forward (10µM each)	1.25µl*	0.5µM*
Primer reverse (10µM each)	1.25µl*	0.5µM*
DNA Template	0.5 - 10µl	0.5 - 12.5ng
ThermoPrime (5U/µl)	0.125µl	0.625 U
Water (PCR Grade)	To 25µl*	

*Scale up or down the volume and concentration as appropriate

Tip:

The gel precipitant in ReddyMix™ Buffer causes a slight increase in the thermal mass of the reaction mix. In a small number of cases this may necessitate some minor re-optimisation of the thermal cycler programme. If this is the case we suggest increasing the temperature of the denaturation step by 1–2°C and decreasing the temperature of the annealing step by 1–2°C. Alternatively, increase the duration of each step by 5–10 seconds.

**Example of
Program:**

	Temp.	Time	Number of cycle
Initial Denaturation	95°C	2 min	1 cycle
Denaturation	95°C	25 sec	30 to 40 cycles
Annealing	48-63°C	35 sec	
Extension**	72°C	65 sec	
Final Extension	72°C	5 min	1 cycle

**Increase length of time in proportion to size of amplicon, *Taq* DNA Polymerase extends at approximately 1000 bp/min.

For Research Purposes Only

Buffer composition

Enzyme Storage and Dilution	100mM	KCl
Buffer:	20mM	Tris-HCl, pH 8.0 (at 25°C)
	0.1mM	EDTA (ethylenediaminetetraacetic acid)
	1mM	DTT (dithiothreitol)
	0.5%	Tween® 20
	0.5%	Nonidet® P40
	50% (v/v)	Glycerol
ReddyMix™	750mM	Tris-HCl, pH 8.8 (at 25°C)
Reaction Buffer	200mM	(NH ₄) ₂ SO ₄
(10X):	0.1% (v/v)	Tween® 20
		Red dye and precipitant

Ordering

Information:

AB-0790/A/N	ThermoPrime ReddyMix™ PCR Kit	250 units
AB-0790/B/N	ThermoPrime ReddyMix™ PCR Kit	2500 units

All sizes are supplied with 10X Reaction Buffer, 20mM dNTP Mix and 25mM MgCl₂.

Use of this product is covered by one or more of the following US patents and corresponding patent claims outside the US: 5,079,352, 5,789,224, 5,618,711, 6,127,155 and claims outside the US corresponding to US Patent No. 4,889,818. The purchase of this product includes a limited, non-transferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. No right under any other patent claim (such as the patented 5' Nuclease Process claims in US Patents Nos. 5,210,015 and 5,487,972), no right to perform any patented method, and no right to perform commercial services of any kind, including without limitation reporting the results of purchaser's activities for a fee or other commercial consideration, is conveyed expressly, by implication, or by estoppel. This product is for research use only. Diagnostic uses under Roche patents require a separate license from Roche. Further information on purchasing licenses may be obtained by contacting the Director of Licensing, Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404, USA.

For Research Purposes Only