

Red Hot *Taq* PCR Kit

Description: Red Hot[®] *Taq* DNA Polymerase is the original ‘red’ thermostable DNA polymerase. It consists of ThermoPrime *Taq* DNA Polymerase containing an inert red dye to facilitate accurate low volume pipetting and as an indicator of enzyme addition. This dye has no adverse effect on the outcome of PCR. 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 optimized for use in the Polymerase Chain Reaction (PCR) process.

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: Red Hot[®] *Taq* DNA Polymerase 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
	Red Hot DNA Polymerase (clear)	20μl	100μl
	Reaction Buffer IV with 15mM MgCl ₂ (red)	1.5ml	2 x 1.5ml
	dNTP Mix (brown)	0.5ml	1.6ml

<u>Polymerase</u>	100mM	KCl
<u>Buffer:</u>	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
<u>10X Reaction</u>	750mM	Tris-HCl, pH 8.8 (at 25°C)
<u>Buffer IV:</u>	200mM	(NH ₄) ₂ SO ₄
	0.1% (v/v)	Tween [®] 20
	15mM	MgCl ₂

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<u>dNTP Mix:</u>	5mM	dATP
	5mM	dCTP
	5mM	dGTP
	5mM	dATP

Storage Conditions:

Store Red Hot *Taq* 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
Red Hot DNA Polymerase (5U/μl)	0.125μl	0.625 U
10X Reaction Buffer with MgCl ₂ (15mM)	2.5μl	1X
dNTP Mix (20mM)	1μl	0.2mM of each nucleotide
Primer forward (10μM each)	1.25μl*	0.5μM*
Primer reverse (10μM each)	1.25μl*	0.5μM*
Water (PCR Grade)	Variable	
DNA Template	0.5 - 10μl	0.5 - 125ng
Total volume	25μl	

*Scale up or down the volume and concentration as appropriate

Example of Program:

	Temp.	Time	Number of cycle
Initial Denaturation	94°C	2 min	1 cycle
Denaturation	94°C	20 sec	30 to 40 cycles
Annealing	50-65°C	30 sec	
Extension**	72°C	60 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.

Analysis Conditions:	25mM	TAPS, pH 9.3 (at 25°C)
		[tris-(hydroxymethyl)-methyl-amino-propane sulfonic acid, sodium salt]
	50mM	KCl
	2mM	MgCl ₂
	1mM	β-mercaptoethanol
	250μM	of each: dCTP, dGTP, dTTP
	250μM	[³ H] dATP (0.05 Ci/mmol)
	1.25μg/μl	activated salmon sperm DNA
	Water added to a total volume of 50μl. Incubated at 74°C for 10 minutes.	

Ordering Information:	AB-1406/A/N	Red Hot <i>Taq</i> PCR Kit	100 units
	AB-1406/B/N	Red Hot <i>Taq</i> PCR Kit	500 units

All sizes are supplied with 10X Reaction Buffer IV containing 15mM MgCl₂ and a 20mM dNTP Mix.

Troubleshooting

For troubleshooting, see www.abgene.com/troubleshoot.asp or contact Thermo Fisher Scientific (ABgene) TechSupport at abgene.techsupport@thermofisher.com

UK TechSupport, call +44 (0) 1372 840 410

For all other regions, please contact your local Thermo Fisher Scientific (ABgene) office / distributor.

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