

## Simple Red™ DNA Polymerase

**Description:** Simple Red™ DNA Polymerase contains 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.

**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:** Simple Red™ DNA Polymerase has 5' to 3' polymerization and exonuclease activity but lacks 3' to 5' exonuclease activity (proofreading).

Kit Contents	Vial	Pack Size (cap color)	
		A	B
Simple Red DNA Polymerase	50µl (clear)	10 x 50µl (clear)	
Reaction Buffer IV	1.25ml (blue)	10 x 1.25ml (blue)	
MgCl <sub>2</sub>	1.5ml (clear)	10 x 1.5ml (clear)	

<u>Simple Red</u>	100mM	KCl
<u>DNA</u>	20mM	Tris-HCl, pH 8.0 (at 25°C)
<u>Polymerase:</u>	0.1mM	EDTA (ethylenediaminetetraacetic acid)
	1mM	DTT (dithiothreitol)
	0.5%	Tween® 20
	0.5%	Nonidet® P40
	50% (v/v)	Glycerol

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

<u>MgCl<sub>2</sub></u>	25mM	MgCl <sub>2</sub>
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**Storage  
Conditions:**

Store Simple Red 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
Simple Red DNA Polymerase (5U/µl)	0.125µl	0.625 U
10X Reaction Buffer IV	2.5µl	1X
dNTP Mix (20mM)	1µl	0.2mM of each nucleotide
MgCl <sub>2</sub> (25mM)	1.5µl*	1.5mM*
Primer forward (10µM)	1.25µl*	0.5µM*
Primer reverse (10µM)	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  
MgCl<sub>2</sub> concentration is usually between 1.5 and 4.0mM

**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, Simple Red DNA Polymerase extends at approximately 1000 bp/min.

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

<b>Ordering Information:</b>	AB-1505/A	Simple Red™ DNA Polymerase	250 units
	AB-1505/B	Simple Red™ DNA Polymerase	10 x 250 units

All sizes are supplied with 10X Reaction Buffer IV and 25mM MgCl<sub>2</sub>.

## Troubleshooting

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