

Taq DNA Polymerase

Description: An ultrapure recombinant thermostable *Taq* DNA polymerase obtained by high level expression of the *Taq* DNA polymerase gene in *E. coli*. It is licensed and optimized for use in the Polymerase Chain Reaction (PCR) process.

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: *Taq* 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	C
<i>Taq</i> DNA Polymerase	50µl (clear)	10 x 50µl (clear)	20 x 50µl (clear)
Buffer IV containing 15mM MgCl ₂	1.25ml (red)	10 x 1.25ml (red)	20 x 1.25ml (red)

<u><i>Taq</i> DNA Polymerase:</u>	100mM	KCl
	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>Reaction</u>	750mM	Tris-HCl, pH 8.8 (at 25°C)
<u>Buffer IV</u>	200mM	(NH ₄) ₂ SO ₄
<u>+MgCl₂ (10X):</u>	0.1% (v/v)	Tween® 20

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**Storage
Conditions:**

Store at -20°C until ready for use. *Taq* DNA polymerase is stable for a minimum of 12 months. The reagents can be stored at 4°C for up to 1 month. Avoid repeated freeze thawing. 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
<i>Taq</i> DNA Polymerase (5U/μl)	0.125μl	0.625 U
10X Reaction Buffer IV + MgCl ₂ (15mM)	2.5μl	1X with 1.5mM MgCl ₂
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	25mM	TAPS, pH 9.3 (at 25°C)
Conditions:	50mM	[tris-(hydroxymethyl)-methyl-amino-propane sulfonic acid, sodium salt]
	2mM	KCl
	1mM	MgCl ₂
	250µM	β-mercaptoethanol
	250µM	of each: dCTP, dGTP, dTTP
	1.25µg/µl	[³ 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.	

Ordering Information:	AB-1192/A	<i>Taq</i> DNA Polymerase	250 units
	AB-1192/B	<i>Taq</i> DNA Polymerase	10 x 250 units
	AB-1192/C	<i>Taq</i> DNA Polymerase	20 x 250 units

All sizes are supplied with 10X Reaction Buffer IV containing 15mM MgCl₂.

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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