

Taq DNA Polymerase with KCl Buffer

Description: An ultrapure recombinant thermostable 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/ μ l

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
Taq DNA Polymerase	50 μ l (clear)	10 x 50 μ l (clear)
Reaction Buffer II	1.25ml (clear)	10 x 1.25ml (clear)
MgCl ₂	100 μ l (clear)	10 x 100 μ l (clear)

Enzyme	100mM	KCl
Storage and Dilution	20mM	Tris-HCl, pH 8.0 (at 25°C)
Buffer:	0.1mM	EDTA (ethylenediaminetetraacetic acid)
	1mM	DTT (dithiothreitol)
	0.5%	Tween® 20
	0.5%	Nonidet® P40
	50% (v/v)	Glycerol

Reaction Buffer (10X):	100mM	Tris-HCl, pH 8.3 (at 25°C)
	500mM	KCl

Reaction Buffer II can be ordered separately under catalogue number: AB-0194

MgCl ₂	25mM	MgCl ₂
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Storage Conditions:

Store *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
10X Reaction Buffer II	5µl	1X
dNTP Mix (20mM)	2µl	0.2mM of each nucleotide
MgCl ₂ (25mM)	3µl	1.5mM
Primer forward (10µM each)	2.5µl	0.5µM
Primer reverse (10µM each)	2.5µl	0.5µM
DNA Template	1 - 20µl	1 - 250ng
<i>Taq</i> DNA Polymerase (5U/µl)	0.25µl	1.25 U
Water (PCR Grade)	To 50µl	

Example of program:

	Temp.	Time	Number of cycle
Initial denaturation	94°C	15 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.

Ordering Information:

AB-0192/KCl/A	<i>Taq</i> DNA Polymerase	250 units
AB-0192/KCl /B	<i>Taq</i> DNA Polymerase	10 x 250 units

All sizes are supplied with 10X Reaction Buffer II and 25mM MgCl₂.

Analysis Conditions:

25mM	TAPS, pH 9.3 (at 25°C)
50mM	[tris-(hydroxymethyl)-methyl-amino-propane sulfonic acid, sodium salt]
2mM	KCl
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.	

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