

# ZymoTaq™ DNA Polymerase

Cat. Nos. E2001 (50 Rxns.)  
E2002 (200 Rxns.)



Storage: -20°C

## Product Information

### Features:

- Hot start DNA polymerase
- Allows for quick and easy setup at room temperature
- Robust product formation
- Reduces the occurrence of non-specific product formation
- Ideal for the amplification of *bisulfite-treated* DNA for methylation detection
- Compatible with real-time and quantitative PCR and suitable for TA-cloning

### Description:

The ZymoTaq™ DNA Polymerase product contains all the reagents needed to perform "hot start" PCR. The inclusion of a heat-activated, thermal-stable DNA polymerase reduces primer dimer and non-specific product formation that can occur when performing conventional PCR. This unique product is specifically designed for the amplification of *bisulfite-treated* DNA for methylation detection, real-time and quantitative PCR that are SYBR Green and probe based. The product generates specific amplicons with little or no by-product formation. Simple and easy to use: heat at 95°C for 10 minutes to initiate polymerization.

ZymoTaq™ DNA polymerase is a heat-activated, "hot start" polymerase that has 3'-terminal transferase activity. The addition of "A" overhangs to amplified DNA makes it ideal for use in TA-cloning.

### Product Contents:

	E2001 (50 Rxns.)	E2002 (200 Rxns.)	Storage Temp.
ZymoTaq™ DNA Polymerase (5 U/μl)	20 μl	80 μl	-20°C
2X Reaction Buffer	2 x 625 μl	8 x 625 μl	-20°C
dNTP Mix (25 mM each dNTP)	25 μl	100 μl	-20°C
DNase/RNase-Free H <sub>2</sub> O	2 x 1 ml	5 x 1 ml	-20°C

### Storage:

Store at -20°C for up to 12 months. Avoid repeated freeze/thawing of reagents. Prolonged storage at -80°C.

### Enzyme Concentration:

Reaction conditions at 1X (50 μl total volume) will contain 2 U of ZymoTaq™ DNA polymerase. ZymoTaq™ DNA Polymerase is at a concentration of 5 U/μl.

### Unit Definition:

One unit (U) enzyme is defined as the amount of enzyme required for the incorporation of 10 nM dNTPs into an acid-insoluble form in 30 minutes at 72°C.

### Proposed Reaction Setup (50 μl)

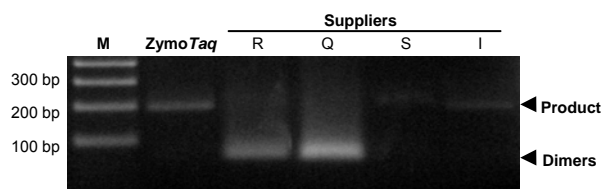
Reagent	Volume	Final concentration
2X Reaction Buffer	25 μl	1X
dNTP Mix	0.5 μl	0.25 mM each dNTP
Forward Primer (10 μM)	Variable	0.3 to 1 μM
Reverse Primer (10 μM)	Variable	0.3 to 1 μM
Template	Variable	< 200 ng/50 μl
ZymoTaq™ DNA Polymerase (5 U/μl)	0.4 μl	2 U/50 μl
ddH <sub>2</sub> O	to 50 μl	
Total volume	50 μl	

**Note:** The final concentration of MgCl<sub>2</sub> in the reaction (above) is 1.75 mM. If required, scale reaction reagent volumes accordingly to optimize the MgCl<sub>2</sub>, primer, and/or template concentrations.

### Suggested Conditions For PCR:

Initial denaturation	95°C	10 min.
Denaturation	94 – 96°C	30 sec.
Annealing	Variable	30 - 40 sec.
Extension	72°C	30 sec. - 1 min. for ≤ 1kb*
<b>30-40 Cycles</b>		
Final extension	72°C	7 min.
Hold	4°C	> 4 min.

**\*Note:** Add an additional 15-30 seconds to the extension time for each kb > 1 kb. Make adjustments to the temperature and/or time if necessary.



Efficient PCR amplification of bisulfite treated DNA for methylation detection. The figure shows 200 bp product formation from bisulfite-treated DNA using ZymoTaq™ PreMix versus the polymerase systems from Suppliers R, Q, S, and I, respectively. In each case, equal amounts of bisulfite-treated DNA (EZ DNA Methylation-Direct™ Kit from Zymo Research) were used for each PCR, and the products separated in a 2.0% (w/v) agarose/TAE/EtBr gel. Also evident from the image, is the low occurrence of both primer dimerization and non-specific product formation.

### Also Available:

	E2003 (50 Rxns.)	E2004 (200 Rxns.)	Conc.	Storage Temp.
ZymoTaq™ PreMix	2 x 625 μl	8 x 625 μl	2X	-20°C
DNase/RNase-Free H <sub>2</sub> O	2 x 1 ml	5 x 1 ml	-	-20°C

Version 1.0.2

**Note:** ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility. The Polymerase Chain Reaction (PCR) process is covered by U.S. Patent #4,683,195;4,683,202 assigned to Hoffmann-La Roche. Patents pending in other countries. No license under these patents to use the PCR process is conveyed expressly or by implication to the purchaser by the purchase of Zymo Research's products. Further information on purchasing licenses to practice the PCR process can be obtained from the director of Licensing at Applied Biosystems, 850 Lincoln Centre Drive, Foster City, California 94404 or at Roche Molecular Systems, Inc., 1145 Atlantic Avenue, Alameda, California 94501.

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