



## Taq DNA Polymerase

## Manual

<b>Catalog #</b>	<b>3243 / 3243d</b>	<b>3245 / 3245d</b>
<b>Package Size</b>	1,000 units	5,000 units
<b>Volume</b>	1 ml	5 ml
<b>Concentration</b>	1 units/ $\mu$ l	

\*Catalog numbers ending with "d" include separate dNTP mix.



### Important!

#### **-20°C Storage Required**

- \* Immediately inspect packages
- \* Freeze upon receipt



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**Intact Genomics, Inc.**

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## Description:

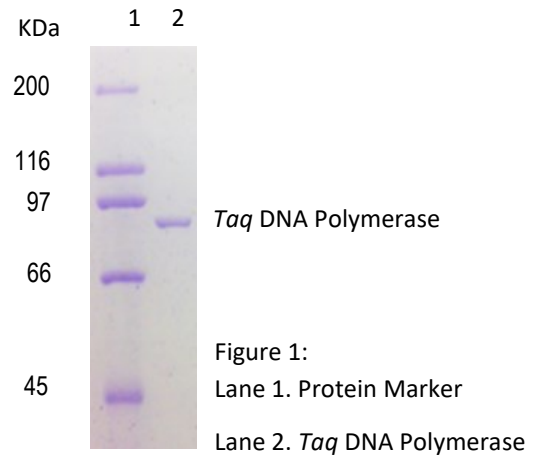
Intact Genomics (ig®) *Taq* DNA Polymerase is a thermostable DNA polymerase that possesses a 5′→3′ polymerase activity (1, 2) and a 5′ flap endonuclease activity (3, 4). This product is supplied with 10x PCR reaction buffer, containing MgCl<sub>2</sub>, which produces a final Mg<sup>2+</sup> concentration of 1.5 mM. Ideal for primary extension reaction with DNA fragments having dA overhang on 3′ ends.

## Physical Purity:

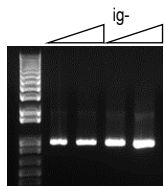
The physical purity of this enzyme is ≥98% as assessed by SDS-PAGE with Coomassie® blue staining (see figure 1).

## Product Source:

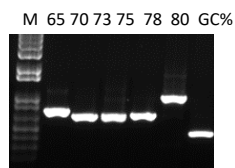
*E. coli* strain expressing a *Taq* DNA Polymerase gene from *Thermus aquaticus* YT-1.



## Taq Polymerase Comparison Data:



Comparison of IG *Taq* with a top brand life tech company's *Taq*



Amplification of genes containing high GC (65-80%) with Intact Genomics GC enhancer

## Applications:

- Routing PCR cloning
- Primer extension
- Colony PCR
- Elongation efficiency 1.0-1.2 kb/min.
- Formulated for amplifying long target DNA.
- Efficient for amplifying high GC content DNA with Intact Genomics magic enhancer

## Product Components:

- Taq DNA Polymerase
- 10x ig Taq Buffer with Mg<sup>2+</sup>
- 5x Magic Enhancer
- 10 mM dNTP (Cat. # 3243d, 3245d only)

## Storage Temperature:

–20°C

## Storage Buffer:

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C

## 10x PCR Buffer with Mg<sup>2+</sup>:

100 mM Tris-HCl pH 8.0, 15 mM MgCl<sub>2</sub>, 100 mM KCl, 80 mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 0.5% Igepal CA 630

## Unit Definition:

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTP into acid-insoluble form in 30 minutes at 72 °C.

## Protocol:

1. Thaw PCR buffer, dNTP, Primer solutions, 5x Magic Enhancer (if required) and mix thoroughly before use.
2. Prepare a reaction mix according to the following table:  
(The reaction mix typically contains all the components needed for PCR except the template.)

PCR Reaction Set Up:	
Template	~ 1- 50 ng
10x igTaq buffer	2.0 $\mu$ l
dNTP (10 mM)	0.4 $\mu$ l
Forward primer (3.2 $\mu$ M)	1.0 $\mu$ l
Reverse primer (3.2 $\mu$ M)	1.0 $\mu$ l
5x Magic Enhancer (optional)	4.0 $\mu$ l
Taq DNA Polymerase (1 U)	1.0 $\mu$ l
H <sub>2</sub> O up to	20.0 $\mu$ l

3. Mix the reaction mixture thoroughly.
4. Add template DNA to the individual PCR tubes containing the reaction mixture.
5. Program the thermal cycler according to the manufacturer's instructions. A typical PCR cycling program is outlined in the following table:

PCR Cycling Conditions			
Steps	Temp.	Time	Cycles
Initial Denaturation	94 °C	3 min	1
Denaturation	94 °C	30 sec	25-35
Annealing	55-60 °C	40 sec	
Extension	72 °C	1-2 min	
Final Extension	72 °C	7 min	1
Hold	4-12 °C	$\infty$	

6. Place the PCR tubes in the thermal cycler and start the cycling program.

### Related Products:

- Hot Start *Taq* DNA Polymerase (Cat.# 3293)
- *Taq* DNA Polymerase 2x Premix (Cat.# 3249)
- i7® High-Fidelity DNA Polymerase (Cat# 3254, 3255)
- i7® High-Fidelity DNA Polymerase 2x Master Mix (Cat# 3257, 3259)

### Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.  
Email: **sales@intactgenomics.com**  
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.

### References:

1. Chien, A., Edgar, D.B. and Trela, J.M. (1976). *J. Bact.* 127, 1550-1557.
2. Lawyer, F.C. et al. (1993). *PCR Methods and Appl.* 2, 275-287.
3. Longley, M.J., Bennett, S.E. and Mosbaugh D.W. (1990). *Nucleic Acids Res.* 18, 7317-7322.
4. Lyamichev, V., Brow, M.A. and Dahlberg, J.E. (1993). *Science.* 260, 778-783.

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Our hours are Monday - Friday, 8AM to 5PM, U.S. Central Standard Time.

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