Taq DNA Polymerase With Dye

Catalog #	3246	3247
Package Size	500 units	5,000 units
Volume	500 µl	5 ml
Concentration	1 units/µl	

Catalog #	3246d	3247d
Package Size	500 units	5,000 units
Volume	500 µl	5 ml
Concentration	1 units/µl	

*Catalog numbers ending with “d” include separate dNTP mix.

Description

Intact Genomics *Taq* DNA Polymerase with Dye 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 $MgCl_2$, which produces a final Mg^{2+} 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 below).

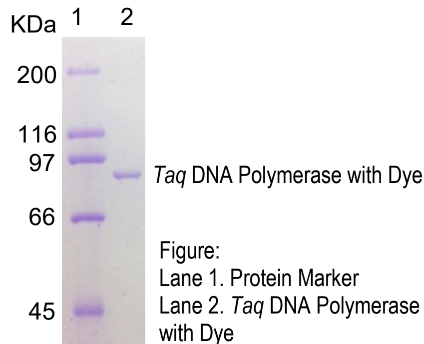
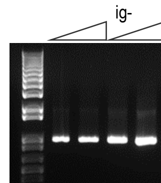


Figure:
Lane 1. Protein Marker
Lane 2. *Taq* DNA Polymerase with Dye

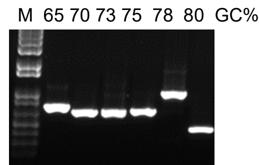
Product Source

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

Taq DNA Polymerase with Dye 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 Includes

1) Taq DNA Polymerase with Dye
2) 10x PCR Buffer with Mg^{2+}
3) 5x Magic Enhancer
4) 10 mM dNTP (Cat. # 3242d, 3242d-04 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 ºC

10x PCR Buffer with Mg2+

100 mM Tris-HCl pH 8.0, 15 mM $MgCl_2$, 100 mM KCl, 80 mM $(NH_4)_2SO_4$, 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 ºC.

Protocol

1. Thaw 10x 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 DNA.

PCR Reaction Set Up:	
Template	~1 - 50 ng
10x PCR buffer	2.0 µl
dNTP (10 mM)	0.4 µl
Forward primer (3.2 µM)	1.0 µl
Reverse primer (3.2 µM)	1.0 µl
5x Magic Enhancer (optional)	4.0 µl
Taq DNA Polymerase with Dye (1 U)	1.0 µl
H_2O up to	20.0 µl

3. Mix the reaction mixture thoroughly.
4. Add template DNA to the individual PCR tubes containing the reaction mixture.

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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 ºC	3 min	1
Denaturation	94 ºC	30 sec	25-35
Annealing	55-60 ºC	40 sec	
Extension	72 ºC	1-2 min	
Final Extension	72 ºC	7 min	1
Hold	4-12 ºC	∞	

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

Reference

1. EChien, 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.