

# Top DNA Polymerase

**[Cat. No.]**

**E – 3100-1**  
**(500 units)**  
**E - 3101-1**  
**(2000 units)**

**[Lot. No.]**

**0701**

**[Concentration]**

**5 units/uL**

● **Description** : Bioneer's *Top* DNA Polymerase is isolated from recombinant *E.coli* strain containing the DNA polymerase gene from *Thermus thermophilus*. It exhibits highest activity at pH 9.0 and 72 °C.

● **Applications** : Polymerase Chain Reaction(PCR), Primer extension, TA cloning, gene sequencing.

● **Supplied with Enzyme**

- **10X Reaction Buffer (1 mL)** : 10X reaction buffer and a separate tube of 20 mM MgCl<sub>2</sub>

- **Dilution Buffer for Top DNA Polymerase (1 mL)** : 20 mM Tris-HCl, 0.5 mM EDTA,

1 mM DTT, 100 mM KCl, Stabilizers, 50 % Glycerol, pH 8.0

- **dNTPs mixture(1 mL)** : 10 mM, each dNTP 2.5 mM

- **20mM MgCl<sub>2</sub>(1mL)**

● **Storage Condition** : 20 mM Tris-HCl, 0.5 mM EDTA, 1 mM DTT, 100 mM KCl, Stabilizers, 50 % Glycerol pH 8.0, store at -20°C

● **Unit Definition** : One unit is defined at the amount of enzyme that will incorporates 10 nmol of dNTP into acid-insoluble material in 30 minutes at 72 °C.

● **Quality Assurance** : Nuclease activity is not detected after incubation of 1 ug of substrate DNA – supercoiled plasmid and lambda/*Hind* III DNA - with 5 units of *Top* DNA Polymerase in 50 uL reaction volume with the supplied Reaction buffer for 18 hr at 37 °C and 70 °C.

● **General Reaction Condition** [ 20 uL reaction volume ]

- Reaction mixture

|                           |                         |   |
|---------------------------|-------------------------|---|
| Template*                 | variable                |   |
| Primer (forward)          | 5 ~ 10 pmoles           | * Amounts of template                   |
| Primer (reverse)          | 5 ~ 10 pmoles           | Plasmid and lambda DNA → more than 1 pg |
| 10X reaction buffer       | 2 uL                    | Bacterial genomic DNA → more than 10 pg |
| 10mM dNTPs mix.           | variable (0.3 ~ 1.0 mM) | Human genomic DNA → more than 1ng       |
| <i>Top</i> DNA Polymerase | 0.5 ~ 2.0 unit          |   |
| D.W                       | variable                |   |

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 Total 20 uL

**Note**

For research use only.  
 Not for use in diagnostic or therapeutic procedures.

Bioneer shall not in any event be liable for incidental or special damage of any kind resulting from any use except on application(s).

If you use short length primer or random primer in PCR, you may detect unexpected PCR product (or non-specific bands).

● **Notice to purchaser**

This enzyme is specifically optimized for increasing base incorporation rate by inactivating 5'-3' exonuclease activity. Therefore, this is not recommended to use for Real Time PCR using Taqman® probe, another product for which will be released soon.

● **Ordering Information**

[ Related BIONEER 's *Top* DNA Polymerase Products ]

| Cat. No.   | Products  |
|------------|---|
| E-3100     | <i>Top</i> DNA Polymerase 500 units, 10 mM dNTPs , 10X reaction buffer with MgCl <sub>2</sub>             |
| E-3101     | <i>Top</i> DNA Polymerase 2,000 units, 10 mM dNTPs , 10X reaction buffer with MgCl <sub>2</sub>           |
| E-3100 – 2 | <i>Top</i> DNA Polymerase 500 units, 10X reaction buffer with MgCl <sub>2</sub>                           |
| E-3101 – 2 | <i>Top</i> DNA Polymerase 2,000 units, 10X reaction buffer with MgCl <sub>2</sub>                         |
| E-3100 – 3 | <i>Top</i> DNA Polymerase 500 units, 10X reaction buffer and a separate tube of 20 mM MgCl <sub>2</sub>   |
| E-3101 – 3 | <i>Top</i> DNA Polymerase 2,000 units, 10X reaction buffer and a separate tube of 20 mM MgCl <sub>2</sub> |
| D-3001     | 10 mM dNTP mixture (1.0 mL), each dNTP 2.5mM  |
| EB-1002    | 10X reaction buffer with MgCl <sub>2</sub>  |