USB® Taq DNA Polymerase

USB Taq DNA Polymerase (PN 74165) is a thermostable enzyme designed for routine PCR and suitable for real time qPCR. USB Taq Polymerase is vigorously tested and has no detectable contaminating endonucleases or exonucleases, which offers consistent performance and ensures quality results. It has a highly processive 5’→3’ polymerase activity and a 5’→3’ exonuclease activity. USB Taq DNA Polymerase is available in economical pack sizes to meet a range of demands and is supplied with 10X PCR Reaction Buffer.

USB Taq DNA Polymerase is available for custom formulations or bulk quantities to meet individual specifications or concentrations. This enzyme is sold without third party licensing restrictions on subsequent use, offering the ability to place into kits or master mixes for resale purposes if authorized in writing by Affymetrix.

**Properties:**
- Activator: Mg2+

**Storage buffer:**
20 mM Tris-HCl, pH 8.5, 0.1 mM EDTA, 100 mM KCl, 1.0 mM DTT, 50% glycerol, and stabilizers.

**Unit definition:**
One unit of enzyme is defined as the amount that catalyzes the incorporation of 10 nmol of total nucleotide into acid insoluble form in 30 minutes at 74°C.

**Concentration:**
5 units/μl

**Assay conditions:**
The reaction mixture contains 25 mM TAPS, pH 9.3 (at 25°C), 50 mM KCl, 2 mM MgCl2, 1 mM β-ME, 200 μM each dATP, dGTP, dTTP, 100 μM [α-32P]-dCTP (0.05 to 0.1 Ci/mmol), 250 μg/ml activated salmon sperm DNA, and Taq DNA Polymerase. After incubation at 74°C for 10 minutes, acid insoluble material is determined (50 μl reaction volume).

**Functional test:**
Functionally tested in PCR in amplification of human gDNA, generating 2016, 972, 447, 268, and 169 bp fragments.

**Functionally Tested 10X PCR Reaction Buffer (1 ml included, PN 71165):**
100 mM Tris-HCl (pH 8.6), 500 mM KCl, 15 mM MgCl2

**Purity:**
Free from detectable non-specific nucleases.

**Shipping and storage:**
Shipped on dry ice. Store at -20°C.

**Applications:**
- Routine PCR amplification
- Suitable for real time qPCR

USB Taq DNA Polymerase

<table>
<thead>
<tr>
<th>Product code</th>
<th>Pack size</th>
</tr>
</thead>
<tbody>
<tr>
<td>74165</td>
<td>50 units</td>
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<tr>
<td></td>
<td>400 units</td>
</tr>
<tr>
<td></td>
<td>2,000 units</td>
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<tr>
<td></td>
<td>4,000 units (2 x 2,000 units)</td>
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<td></td>
<td>20,000 units</td>
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</tbody>
</table>

**Fig. 1. Lambda DNA**

DNA fragments ranging from 0.1 kb to 6 kb amplified from λ DNA.

**Fig. 2. Human gDNA**

Human gDNA with USB Taq DNA Polymerase; NUMB fragments ranging from 0.2 kb to 4 kb amplified from human genomic DNA.
Related products:

**Amplify**

- **HotStart-IT Taq Master Mix (2X) [71196]**
  - 25 reactions
  - 100 reactions
  - 500 reactions

- **FideliTaq PCR Master Mix, 2X [71182]**
  - 100 reactions

- **VeriQuest® Taq DNA Polymerase [71170]**
  - 50 units
  - 250 units
  - 1,000 units
  - 5,000 units

- **VersaTaq™ Direct PCR Polymerase [71002]**
  - 50 reactions
  - 200 reactions
  - 500 reactions
  - 2 x 500 reactions

- **Taq PCR Master Mix, 2X [71162]**
  - 100 reactions (50 μl/rctn)
  - 4 x 625 μl per pack

- **Taq Master Mix Plus [71163]**
  - Contains mix, 25 mM MgCl₂, and PCR-Qualified H₂O.
  - 100 reactions (50 μl/rctn)

**PCR Nucleotide Mix, 10 mM [77212]**

- 500 μl
- 2 x 500 μl

**PCR Nucleotide Mix, 25 mM [77119]**

- 500 μl

**dNTP Set of Four (dA, dC, dG, dT) 100 mM Solutions [77100]**

- 4 x 25 μmol (250 μl)
- 4 dNTPs per pack

**Betaine, 5 M Solution [77507]**

- 1.5 ml
- 5 x 1.5 ml
- 10 ml

**Magnesium Chloride, 1 M Solution [78641]**

- 10 x 1 ml
- 100 ml

**Mineral Oil [71600]**

- 10 ml
- 25 ml
- 1 L

**Purify**

- **ExoSAP-IT® PCR Product Cleanup [78250]**
  - 20 reactions

- **[78200]**
  - 100 reactions

- **[78201]**
  - 500 reactions

- **[78202]**
  - 2,000 reactions

- **[78205]**
  - 5,000 reactions

- **HT ExoSAP-IT Fast High-Throughput PCR Product Cleanup [78595]**
  - 20 reactions

- **480 reactions x 8-tube strip**
- **5,760 reactions x 1 plate**
- **23,040 reactions – 4 plates**

- **TE Buffer, 1X Solution [75893]**
  - 10 x 1 ml
  - 100 ml
  - 500 ml

- **Water, Nuclease-Free [71786]**
  - 10 x 1 ml
  - 100 ml
  - 500 ml

- **1 L
  - 5 L**