**Product Description:** TaqIT is an exonuclease deficient derivative of Taq DNA polymerase. TaqIT lacks the first 280 amino acids of native Taq polymerase that contain the 5'-3' exonuclease domain. This deletion makes TaqIT slightly more thermostable and has slightly greater fidelity than full length Taq. Like Taq polymerase, TaqIT has no inherent 3'-5' exonuclease activity.

<table>
<thead>
<tr>
<th>Assay</th>
<th>SDS Purity</th>
<th>Specific Activity</th>
<th>SS Exonuclease</th>
<th>DS Exonuclease</th>
<th>DS Endonuclease</th>
<th>E. coli DNA Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units Tested</td>
<td>n/a</td>
<td>n/a</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Specification</td>
<td>&gt;99%</td>
<td>42,000 U/mg</td>
<td>&lt;1.0% Released</td>
<td>&lt;1.0% Released</td>
<td>No Conversion</td>
<td>&lt;10 copies</td>
</tr>
</tbody>
</table>

**Source of Protein:** A recombinant *E. coli* strain carrying the TaqIT gene from the thermophilic organism *Thermus Aquaticus* YT-1.

**Unit Definition:** 1 unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid-insoluble material in 30 minutes at 75°C.

**Molecular weight:** 62,407 Daltons

**Quality Control Analysis:**

**Unit Activity** is measured using a 2-fold serial dilution method. Dilutions of enzyme were made in a reduced-glycerol (5%) containing Taq-B DNA Polymerase storage solution and added to 50 µL reactions containing Calf Thymus DNA, 25 mM TAPS (pH 9.3), 50 mM KCl, 1 mM DTT, 3H-dTTP and 100 µM dNTPs. Reactions were incubated 10 minutes at 75°C, plunged on ice, and analyzed using the method of Sambrook and Russell (Molecular Cloning, v3, 2001, pp. A8.25-A8.26).

**Protein Concentration** is determined by OD$_{280}$ absorbance.

**Physical Purity** is evaluated by SDS-PAGE of concentrated and diluted enzyme solutions followed by silver stain detection. Purity is assessed by comparing the aggregate mass of contaminant bands in the concentrated sample to the mass of the protein of interest band in the diluted sample.

**Single-Stranded Exonuclease** is determined in a 50 µL reaction containing a radiolabeled single-stranded DNA substrate and 10 µL of enzyme solution incubated for 4 hours at 37°C.

**Double-Stranded Exonuclease** is determined in a 50 µl reaction containing a radiolabeled double-stranded DNA substrate and 10 µL of enzyme solution incubated for 4 hours at 37°C.

**Limitations of Use**

This product was developed, manufactured, and sold for *in vitro* use only. The product is not suitable for administration to humans or animals. SDS sheets relevant to this product are available upon request.
Double-Stranded Endonuclease is determined in a 50 µL reaction containing 0.5 µg of plasmid DNA and 10 µL of enzyme solution incubated for 4 hours at 37°C.

E. coli 16S rDNA Contamination is evaluated using 5 µL replicate samples of enzyme solution denatured and screened in a TaqMan qPCR assay for the presence of contaminating E. coli genomic DNA using oligonucleotide primers corresponding to the 16S rRNA locus.

Supplied in: 20mM Tris-HCl, 222mM (NH₄)₂SO₄, 10mM 2-mercaptoethanol, 0.1 mM EDTA, 0.1% Brij 58, 50% glycerol, pH 8.6 @ 25°C.

Supplied with:
10X TaqIT Reaction Buffer (B7620): 500mM Tris-HCl, 160 mM (NH₄)₂SO₄, 35mM MgCl₂, 0.25% Brij 58, pH 9.2 @ 25°C.

References: