Bst DNA Polymerase

(Large Fragment, exo $^-$)

(*Bacillus stearothermophilus*)

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Cat. No.	Size
E1078-01	100 units
E1078-02	500 units

Unit Definition: One unit is the amount of enzyme required to incorporate 10 nmoles of total deoxyribonucleotide into acid-insoluble form in 30 min at 60°C.

Storage Conditions:
Store at -20°C

Large exonuclease free fragment of thermostable *Bst* DNA Polymerase with strand displacement activity.

Description:

- *Bst* DNA Polymerase is a moderately thermostable enzyme from *Bacillus stearothermophilus*.
- Ultrapure, recombinant protein.
- The enzyme replicates DNA optimally at 65°C.
- Catalyzes the polymerization of nucleotides into duplex DNA in the 5´→3´ direction in the presence of magnesium ions.
- Lacks the 5´→3´ exonuclease activity, while retaining the polymerase activity (1).
- Broad activity range; can replace mesophilic polymerases as well as synthesize DNA at high temperatures. Thus it is suitable for amplification of difficult DNA templates, including repetitive sequences, GC-rich regions and problematic secondary structures (2,3).
- Can be heat inactivated at temperatures above 80°C.
- Active over wide range of reaction buffer conditions and magnesium ions concentrations.
- Used in isothermal DNA sequencing at elevated temperatures.
- Ideal for DNA synthesis reactions requiring strand displacement.
- Exhibits thermostable reverse transcriptase activity.
- Used in isothermal nucleic acids amplification.

Storage Buffer:

20 mM potassium phosphate (pH 6.8), 1 mM dithiothreitol and 50% (v/v) glycerol.

Assay Conditions:

50 mM Tris-HCl, (pH 8.6 at 22°C), 10 mM $MgCl_2$, 1 mg/ml bovine serum albumin, 100 mM KCl, 1 mM dithiothreitol, 0.2 mM each dCTP, dGTP, dTTP and [α-^{32}P]dATP, 15 µg of activated DNA. Incubation is at 60°C for 30 min in a reaction volume of 50 µl.

Quality Control:

All preparations are assayed for contaminating endonuclease, exonuclease and single- and double-stranded DNase activities.

References:

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3. *McClary, J. et al. (1991) J. DNA Sequencing and Mapping, p.p.173-180.*
4. *Tomita N. et al. (2008) Nature Protocols, p.p. 877-882*