**Therminator™ DNA Polymerase**

**Description:** Therminator DNA Polymerase is a 9°N DNA Polymerase variant with an enhanced ability to incorporate modified substrates such as dideoxynucleotides, ribonucleotides and acyclovir.

**Source:** An E. coli strain that carries the 9°N (D141A / E143A / A485L) DNA Polymerase gene, a genetically engineered form of the native DNA polymerase from *Thermococcus* species 9°N-7.

**Applications:**
- DNA sequencing by partial ribosubstitution (3)
- DNA sequencing using dideoxy (4) acyclovir
- SNP analysis with dideoxy or acyclovir

**Unit Definition:** One 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.

**Unit Assay Conditions:** 1X ThermoPol Reaction Buffer, 200 µM dNTPs including [3H]-dTPP and 15 mM primed single-stranded M13mp18.

**Heat Inactivation:** No

**Quality Control Assays**

**Exonuclease Activity:** Incubation of a 50 µl reaction in ThermoPol Reaction Buffer containing a minimum of 20 units of Therminator DNA Polymerase and 1 µg of a mixture of single and double-stranded [3H] E. coli DNA for 4 hours at 75°C releases < 0.1% of the total radioactivity.

**Endonuclease Activity:** Incubation of a 50 µl reaction in ThermoPol Reaction Buffer containing a minimum of 20 units of Therminator DNA Polymerase with 1 µg of supercoiled dX174 DNA for 4 hours at 37°C results in < 10% conversion to the nicked form as determined by agarose gel electrophoresis.

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**References:**

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**Companion Products Sold Separately:**
- Magnesium Sulfate (MgSO4) Solution #B1003S 6.0 ml
- ThermPol Reaction Buffer Pack #B9004S 6.0 ml
- ThermPol II (Mg-free) Reaction Buffer Pack #B9005S 6.0 ml
- ThermPol DF (Detergent-free) Reaction Buffer Pack #B9013S 6.0 ml

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**References:**
Deoxynucleotide Solution Set
#N0446S 25 µmol each

Deoxynucleotide Solution Mix
#N0447S 8 µmol each
#N0447L 40 µmol each

Acyclonucleotide Set
#N0460S 0.5 µmol each

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