

Product Data Sheet

□ Cat # RP-394 Recombinant Taq DNA Polymerase **Size:** □ 1000 UI

Taq DNA Polymerase (a) is a thermostable enzyme of approximately 94 kDa isolated from *Thermus aquaticus*. This unmodified enzyme replicates DNA at 74°C and exhibits a half-life of 40 minutes at 95°C. The enzyme catalyzes the polymerization of nucleotides into duplex DNA in the 5'~3' direction in the presence of magnesium and also possesses a 5'~3' exonuclease activity. Taq DNA Polymerase is recommended for use in PCR but is not recommended for use in DNA sequencing reactions.

Source: Recombinant e.coli contains *Thermus aquaticus* polymerase gene. 50mM Tris-HCl (pH 8.0), 100mM NaCl, 0.1mM EDTA, 1mM DTT, 50% glycerol and 1% Triton X-100.

Applications and Suggested Dilutions: Compositions of the storage buffers have been optimized to assure quality performance of the enzyme under a variety of conditions. Choose either Taq with Mg-free 10X Reaction Buffer and separate 25mM MgCl₂ or Taq with 10X Reaction Buffer containing 15mM MgCl₂. PCR, 3' A-tailing of blunt ends, compatible with Vectors. 10X Reaction Buffer with MgCl₂: 500mM KCl, 100mM Tris-HCl (pH 9.0 at 25C), 1% Triton X-100 and 15mM MgCl₂. Buffer is optimized for use with 0.2mM of each dNTP. 10X Reaction Buffer without MgCl₂: 500mM KCl, 100mM Tris-HCl (pH 9.0 at 25C) and 1% Triton X-100. Include: 10X Reaction Buffer without MgCl₂ and separate 25mM MgCl₂ Solution. Users must optimize the appropriate concentration and conditions for each assay.

Unit Definition: One unit is defined as the amount of enzyme required to catalyze the incorporation of 10nmol of dNTP into acid-insoluble material in 30 minutes at 74°C. The reaction conditions are: 50mM Tris-HCl (pH 9.0 at 25°C), 50mM NaCl, 5mM MgCl₂, 200µM each of dATP, dCTP, dGTP, dTTP (a mix of unlabeled and [3H]dTTP), 10µg activated calf thymus DNA and 0.1mg/ml BSA in a final volume of 50ul.

Storage and Stability: Stable for 5 days at 10°C, for longer period of time store at -20°C. Compatibility with Reaction Buffers: Taq DNA Polymerase in Storage Buffer. Use of other reaction buffers that do not contain Triton X-100 (final concentration of 0.1%) will result in inactivation of the enzyme. If supplied in powder then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4oC for ~1 week or aliquots in suitable size and store at -20oC for long term storage.

Usage: This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

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