Genemed Synthesis, Inc.
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Product Specifications

Product name: Taq DNA polymerase

Cat#: J-400-1000, J-400-5000, J-400-10000

Size: 1000U, 5000U, 10000U

Description: Taq DNA Polymerase is isolated from Thermus aquaticus. The enzyme consists of a single polypeptide with a molecular weight of approximately 94 kDa. Taq DNA polymerase is heat-stable and will synthesize DNA at elevated temperatures from single-stranded templates in the presence of a primer.

Contents: Taq DNA Polymerase (5U/ul)

Storage and Stability: The undiluted solutions are stable when stored at -15℃ to -25℃

Unit Definition: One unit incorporates 10 nmol of deoxyribonucleotide into acid-precipitable material in 30 minutes at 74℃. Unit assay conditions: 25 mM TAPS (pH 9.3), 50 mM KCl, 2 mM MgCl2, 1 mM DTT, 0.5 mg/ml activated salmon sperm DNA, 0.2 mM dATP, dCTP, dGTP, dTTP

Basic PCR Protocol: The following basic protocol serves as a general guideline and a starting point for any PCR amplification. Optimal reaction conditions (incubation times and temperatures, concentration of Taq DNA Polymerase, primers, MgCl2, and template DNA) vary and need to be optimized.

1. Add the following components to a sterile 0.5-ml microcentrifuge tube sitting on ice:

Components	Volume	Final Concentration
10X PCR buffer minus Mg	10ul	1X
10mM dNTP mixture	10ul	0.2mM each
50mM MgC12	3ul	1.5mM
Primer mix(10uM each)	5ul	0.5uM each
Template DNA	5-20ul	n/a
Taq DNA Polymerase(5U/ul)	0.5ul	2.5 units
Autoclaved distilled water	To 100ul	n/a

We recommend preparing a master mix for multiple reactions, to minimize reagent loss and enable accurate pipetting.

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2. Mix contents of tube and overlay with 50 µl of mineral or silicone oil.

3. Cap tubes and centrifuge briefly to collect the contents to the bottom.

4. Incubate tubes in a thermal cycler at 94℃ for 3 minutes to completely denature the template.

5. Perform 25–35 cycles of PCR amplification as follows:
   Denature 94℃ for 45 s
   Anneal 55℃ for 30 s
   Extend 72℃ for 1 min 30 s

6. Incubate for an additional 10 min at 72℃ and maintain the reaction at 4℃. The samples can be stored at –20℃ until use.

7. Analyze the amplification products by agarose gel electrophoresis and visualize by ethidium bromide staining. Use appropriate molecular weight standards.