

## Taq DNA polymerase

Taq DNA Polymerase (5 U/μl)	100 μl
10×PCR Buffer (Mg <sup>2+</sup> Plus)	1ml X2ea

### **For research use only**

Cat No: YT1501

Size: 500 U

Store at -20°C

#### **Description**

YTA Taq DNA Polymerase is a thermostable recombinant DNA polymerase produced by Yekta Tajhiz Azma. This product is resulting from thermophilic bacterium *Thermus aquaticus*. YTA Taq DNA Polymerase can amplify DNA target up to 5 kb (simple template). Its molecular weight is 94 kDa. The elongation velocity is 0.9~1.2kb/min (70~75°C).

It has 5' to 3' polymerase activity but lacks of 3' to 5' exonuclease activity that results in a 3'-dA overhangs PCR product.

#### **Unit Definition**

One unit is defined as the amount of the enzyme required to catalyze the incorporation of 10 nmole of dNTPs into an acid-insoluble form in 30 minutes at 70°C using hering sperm DNA as substrate.

#### **Storage Buffer**

20mM TrisCl (pH8.0), 100mM KCl, 3.2mM MgCl<sub>2</sub> 1mM DTT, 0.1% Triton X-100, 0.1% Tween20, 0.2mg/ml BSA, 50% (v/v) glycerol

#### **10X PCR Buffer with Mg<sup>2+</sup>**

100mM Tris-HCl (pH 8.8), 500mM KCl, 1% Triton-X-100, 16mM MgCl<sub>2</sub>

### **1. Add the following components to a sterile microcentrifuge tube sitting on ice:**

#### **1.1 Recommended PCR assay with PCR Buffer (Mg<sup>2+</sup> plus)**

Reagent	Quantity for 50μl volume	Final concentration
Sterile deionized water	Variable	-
10X PCR buffer (Mg <sup>2+</sup> plus)	5 μl	1X
dNTPs (10mM each)	1 μl	0.2 mM each
Primer I	Variable	0.4-1 μM
Primer II	Variable	0.4-1 μM
Taq DNA Polymerase (5U/ μl)	0.25-0.5 μl	1.25-2.5 U/50μl
Template DNA	Variable	10pg-1 μg
Total		50μl

### **2. Mix contents of tube. Cap tubes and centrifuge briefly to collect the contents to the bottom.**

When using a thermal cycler that does not contain a heated lid, overlay the reaction mixture with 25 μl mineral oil.

### **3. Perform 25-35 cycles of PCR amplification as follows:**

Step	Temperature	Duration
Initial Denaturation	94°C	3 minutes
25-35 Cycles	94°C	30 seconds
	55-68°C	30 seconds
	72°C	1 minutes
Final Extension	72°C	10 minutes

**4. Incubate for an additional 10 min at 72°C and maintain the reaction at 4°C. The samples can be stored at -20°C until use.**

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