Parstous

Hot-start AptaTaq DNA polymerase

Cat: C101011 (250 U, 50 µl)
Cat: C101012 (500 U, 100 µl)
Store at -20 °C

Contents:

Component	C101011	C101012
Apta Taq DNA poly. 5 U/µl	250 U	500 U
$MgCl_2$ Solution 25 mM	0.5 ml	1 ml
10X Buffer $MgCl_2$ free	0.5 ml	1 ml

Description:

This DNA polymerase is a mixture of Taq DNA polymerase and a temperature sensitive, aptamer-based inhibitor. The inhibitor binds reversibly to the enzyme, inhibiting polymerase activity at temperatures below 40 °C, but releases the enzyme during normal PCR cycling conditions. The aptamer-based hot start mechanism does not require a separate high temperature incubation step to activate the enzyme. The enzyme is inactive at room temperature, avoiding extension of non-specifically annealed primers or primer dimers and providing higher specificity of DNA amplification.

The activated enzyme maintains the same functionality as Taq DNA polymerase: it catalyzes 5' → 3' synthesis of DNA, has no detectable 3' → 5' proofreading exonuclease activity.

Kit storage:

This kit should be stored at -20 °C. Under this condition reagents are stable for two years from the date of production.

General Reaction Protocol:

1. Thaw 10X reaction buffer, dNTP mixture.
2. Mix the master mix thoroughly and dispense appropriate volumes into PCR tubes or plates.

Component	Volume	Final Conc.
10X Reaction Buffer	2 µL	1X
MgCl2 Solution 25 mM	1.2 µL	1.5 mM
40 mM dNTPs Mix (10 mM each)	0.5 µL	0.25 mM
Upstream Primer (10 pmol/ µL)	1 µL	0.5 pmoles/µL
Downstream Primer (10 pmol/ µL)	1 µL	0.5 pmoles/µL
Template DNA	Variable	10 fg~1 µg
PCR grade water	Variable	-
Apta Taq DNA poly. 5U/µl	0.25 µL	1.25 U
Total Volume	20 µL	-

3. Add templates DNA to the individual PCR tubes or wells containing the master mix.
4. Program the PCR machine according to the program outlined.

Cycle	Time	Temp °C
1	4 min	95
30-35	30 sec	94
	30 sec	57
	30-60 sec	72
1	5 min	72

Notes:

Extension temperature is between 68 and 72°C. We highly recommend 68 °C for more efficiency of Pars Tous Taq DNA polymerase.
* For PCR products longer than 3~4 Kb, use an extension time of approximately 1 min per Kb DNA.
* A DNA fragment which is amplified by Taq DNA polymerase has A overhang, and it enables you to do cloning by using T-vector

Agarose gel Electrophoresis:

Run the total 5-7 µL of PCR products alongside 3µL DNA marker on a 2% agarose gel containing Green viewer DNA safe stain.

Disclaimers and Addresses:

This product is for **Research Use Only** and should only be used by trained professionals.

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