Cat.:BR1A102

AcuGenix™ Fast Taq DNA Polymerase-V2

V01

Product Description

AcuGenix™ Fast Taq DNA Polymerase-V2 is a hot-start fast amplification Taq enzyme product developed by Biori.This product effectively suppresses non-specific reactions arising from primer mispriming or primer-dimer formation during PCR system preparation and amplification processes, making it highly specific with more effective amplification of low template concentrations, suitable for multiplex PCR amplification reactions. This reagent demonstrates excellent system compatibility and delivers stable amplification results across various types of PCR reactions.

Components

Components	BR1A102-01 100 U	BR1A102-02 1000 U	BR1A102-03 5000 U
5 U/μL AcuGenix™ Fast Taq DNA Polymerase-V2	0.02 mL	0.2 mL	1 mL

Unit Definition

One unit of activity (U) refers to the amount of enzyme needed to incorporate 10 nmol of deoxyribonucleotides into acid-insoluble material using activated salmon sperm DNA as a template/primer within 30 minutes at 74°C.

Storage

Storage at -20±5℃.

Notes

1.For Research Use Only. Not for use in diagnostic procedures.

2.Mix thoroughly before use and avoid repeated freeze-thaw cycles.

3.The fast DNA polymerase amplification rate is no less than 1 kb/10 s. Different PCR instruments exhibit significant differences in temperature ramp rate, temperature control mode, and thermal conductivity. Therefore, it is recommended to optimize the optimal reaction conditions based on the specific characteristics of the fast PCR instrument.

4.This system has strong adaptability and higher specificity and sensitivity.

5.It is suitable for multiplex PCR amplification reactions.

6.This product has both 5'-3' polymerase and exonuclease activity, no 3'-5' exonuclease activity or proofreading function.

7.This product is suitable for qualitative/quantitative detection in regular PCR and RT-PCR.

8.PCR products have an A-tail at the end, which can be directly cloned into T vector.

9.For primers with low annealing temperature or amplification of fragments longer than200 bp, it is recommended to use a three-step method.

Quality Control

1.SDS-PAGE electrophoresis purity no less than 98%.

2.Amplification sensitivity, batch-batch difference, and stability.

3.No exogenous nuclease activity, no exogenous endonuclease or exonuclease contamination.

Prepare Reaction Mix

Component	Volume per Reaction	Final Concentration
10×PCR Buffer Ⅱ (Mg^{2+} free)[1]	5 μL	1×
dNTPs（10 mM each）	1 μL	200 μM
25 mM $MgCl_2$	2-8 μL	1-4 mM
5 U/μL AcuGenix™ Fast Taq DNA Polymerase-V2	0.25-0.5 μL	1.25-2.5U
25×Primer Mix[2]	2 μL	1×
Template	——	<1 μg/Reaction
ddH_2O	To 50 μL	——

1.This buffer does not contain dNTPs or Mg^{2+}, so they must be added to the reaction system before use.

2.If used for qPCR/qRT-PCR, a fluorescent probe needs to be added to the reaction system. Typically, a final primer concentration of 0.2 μM performs good results. If the reaction performance is poor, adjust the primer concentration within the range of 0.2-1 μM. Typically, probe concentrations are optimized in the range of 0.1-0.3 μM. Combinations of primers and probes can be tested using gradient experiments to find their optimal combination.

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Reaction Program

Conventional PCR Program			
Procedure	Temp	Time	Cycles
Initial denaturation	95℃	1-5 min	1
Degeneration	95℃	10-20 s	40-50
Annealing and Elongation	56-64℃	20-60 s	

Fast PCR Program			
Procedure	Temp	Time	Cycles
Initial denaturation	95℃	1-5 min	1
Degeneration	95℃	1-5 s	40-45
Annealing and Elongation	56-64℃	5-20 s	

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