Cat.:BR1A101

AcuGenix™ Taq DNA Polymerase

V01

Product Description

AcuGenix™ Taq DNA Polymerase is a hot-start Taq that not only better suppresses non-specific reactions caused by primer false annealing or primer dimers during PCR system preparation and amplification, making the product highly specific and more effective for amplifying low-concentration templates, suitable for multiplex PCR amplification reactions; but also has good system adaptability, achieving stable amplification results in different types of PCR reactions.

Components

Components	BR1A101-01 100 U	BR1A101-02 1000 U	BR1A101-03 5000 U
5 U/μL AcuGenix™ Taq DNA Polymerase	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.This product can be quickly hot-started at 95°C or 94°C for 1-5 minutes.
4.This system has strong adaptability and higher specificity and sensitivity.
5.It is suitable for high-sensitivity PCR detection reagents and can be used in 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™ Taq DNA Polymerase	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

Two-step Method			
Procedure	Temp	Time	Cycles
Initial denaturation	95℃	1-5 min	1
Degeneration	95℃	10-20 s	35-50
Annealing and Elongation	56-64℃	20-60 s	
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Three-step Method			
Procedure	Temp	Time	Cycles
Initial denaturation	95℃	1-5 min	1
Degeneration	95℃	10-20 s	35-50
Annealing	56-64℃	10-30 s	
Elongation	72℃	10-60 s	

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