ApStarTaq™ PCR Mix, 2×

LOT: See product label

EXPIRY DATE: See product label

ORDERING INFORMATION

CAT. NO.	SIZE	PACKAGE CONTENT
BR0201601	400 rxn of 25 µl	4 × 1.25 ml ApStarTaq PCR Mix
BR0201602	2000 rxn of 25 µl	20 × 1.25 ml ApStarTaq PCR Mix

COMPONENT	COMPOSITION
ApStarTaq PCR Mix	Optimized 2× ApStarTaq PCR Mix
STORAGE	–20°C (until expiry date – see product label)

FEATURES

- Aptamer-based hot-start functionality
- Immediate hot start without any activation step
- High PCR specificity and sensitivity
- Optimized Master Mix including exceptionally pure ApStarTaq DNA Polymerase and highest quality dNTPs

APPLICATIONS

- Convenient and fast PCR reactions in endpoint and real-time analysis
- Hot-start PCR up to 3 kb
- Amplification of low-copy-number targets
- RT-PCR and TA cloning

DESCRIPTION

biotechrabbit™ ApStarTaq PCR Mix is an optimized aptamer-based hot-start mix and the first-choice for fast PCR reactions. The exceptional quality guarantees highest performance, suitable for standard and fast PCR cycling in both, endpoint and real-time assays. It ensures high product yields with low background and without primer–dimer formation or non-specific priming.
The aptamer binds to Taq DNA Polymerase and inhibits the enzyme activity at temperatures below 45°C. This ensures full hot-start functionality. The enzyme is released during standard PCR cycling conditions. There is no need for separate heating or denaturation steps, allowing fast PCR reactions.

Info: Recommended annealing temperature is 2°C above primer Tm (use gradient PCR to optimize the annealing temperature).

PROTOCOL

Prevention of PCR contamination

When assembling the amplification reactions, care should be taken to eliminate the possibility of contamination with undesired DNA.

- Use separate clean areas for preparation of samples and reaction mixtures and for cycling.
- Wear fresh gloves. Use sterile tubes and pipette tips with aerosol filters for PCR setup.
- Use only water and reagents that are free of DNA and nucleases.
- With every PCR setup, perform a contamination control reaction that does not include template DNA.

Standard PCR setup

The standard PCR protocol using biotechrabbit reaction buffer provides excellent results for most applications. Optimization might be necessary for certain conditions, such as the amplification of long targets, high GC or AT content, strong template secondary structures or insufficient template purity. In such cases, optimization of template purification (see biotechrabbit nucleic acid purification kits), primer design and annealing temperature is recommended.
The best conditions for each primer-template can be optimized with the following:

- Choosing the optimal quantities of template and primers
- Optimizing cycling conditions

BASIC PROTOCOL

- The Master Mix is designed to be used without any optimization as it has all necessary reaction components in optimal amounts for successful PCR.
- Thaw on ice and mix all reagents well.
- Keep all reagents and reactions on ice.
- Pipet the master mix into thin-walled 0.2 ml PCR tubes.
- Add template and primers separately if they are not used in all reactions.

COMPONENT	VOLUME	FINAL CONCENTRATION
ApStarTaq PCR Mix, 2×	12.5 µl	1×
Forward primer	Variable	0.2–1 µM
Reverse primer	Variable	0.2–1 µM
Template DNA	Variable	10 pg–1 µg
	Use 0.01–1 ng for plasmid or phage DNA and 0.1–1 µg for genomic DNA	
Nuclease free water	Variable	
Total volume	25 µl	

- Mix and centrifuge briefly to collect the liquid in the bottom of the tube.
- Place in the PCR cycler.

CYCLING PROGRAM

STEP	TEMPERATURE	TIME	CYCLES
Initial denaturation	95°C	1 min*	1
	** recommended time for denaturation of genomic DNA templates*		
Denaturation	95°C	30 s	25–35
Annealing*	(55-68°C)	15–30 s	25–35
	**Recommended annealing temperature is 2°Cabove Tm of primers, or use gradient PCR to optimize the annealing temperature*		
Extension	72°C	30–60 s/kb	25–35
Final extension	72°C	5 min	1
	To extend all incomplete PCR products		
Storage in the cycler	4°C	Indefinitely	1

- Add loading dye solution (see DNA Loading Dye, 6×, cat. no. BR0800301) to the reactions to analyze PCR products on a gel or store them at −20°C.

CERTIFICATE OF ANALYSIS

Quality Control

Functional assay

Human genomic DNA was amplified using the ApStarTaq PCR Mix and specific primers to produce a distinct band.

Quality confirmed by: Head of Quality Control

SAFETY INSTRUCTIONS

For safety instructions please see Safety Data Sheets (SDS)/Sicherheitshinweise finden Sie in den SDS unter: http://www.biotechrabbit.com/support/documentation.html.

USEFUL HINTS

- Visit Applications at www.biotechrabbit.com for more products and product selection guides.
- Most biotechrabbit products are available in custom formulations and bulk amounts.

CONTACT BIOTECHRABBIT

biotechrabbit GmbH
Volmerstr. 9a
12489 Berlin,
Germany

info@biotechrabbit.com
support@biotechrabbit.com
www.biotechrabbit.com

Phone: +49 30 555 7821-10
Fax: +49 30 555 7821-99

valid from 23.04.2019