Product Information

Cheetah™ PEA-PLEX HotStart Taq

Unit Size:

29138-100UL: 100 uL, 500 U
29138-1ML: 1 mL, 5 kU

Storage and Handling

Store at -20°C. Product is stable for at least 12 months from date of receipt when stored as recommended.

Product Description

Cheetah™ PEA-PLEX HotStart Taq, 5 U/uL is a unique formulation of Biotium's chemically modified Cheetah™ Taq polymerase validated by third parties specifically for NGS-based high-throughput proximity extension assays (PEA) for protein detection. Cheetah™ PEA-PLEX is suitable for fast cycling qPCR, as well.

The proprietary chemical modification of Cheetah™ Taq renders it inactive at room temperature for improved specificity and reduced primer-dimer formation in PCR. Cheetah™ Taq also has a longer shelf life than AmpliTaq Gold® due to its unique chemical modification, which is less likely to form intramolecular cross-links.

The activation time for Cheetah™ Taq is only 2 minutes at 95°C, which is 5- to 10-times faster than that for AmpliTaq Gold® or HotStarTaq®, making it especially advantageous for fast-cycling qPCR. Furthermore, unlike AmpliTaq Gold®, activation of Cheetah™ Taq is relatively insensitive to pH, permitting use of reaction buffers between pH 6 and pH 10. Unlike antibody-based hot-start Taq polymerases, chemically modified Cheetah™ Taq is free of animal DNA, and its activity is completely suppressed prior to heat activation. After heat activation, Cheetah™ Taq has the same functional properties and fidelity as native Taq polymerase.

We also offer Cheetah™ FLEX HotStart Taq for fast cycling qPCR as a standalone polymerase and in our ready-to-use Forget-Me-Not™ qPCR Master Mixes (see Related Products). Cheetah™ FLEX has also been validated by third parties for qPCR-based PEA assays. This product is available for licensing and bulk purchase.

Experimental Protocol

Cheetah™ PEA-PLEX HotStart Taq is supplied as standalone polymerase stock solution for custom assay development. We've provided an example PCR reaction protocol below as a starting point for optimization.

PCR reaction setup

Reaction Component	Volume for 50 uL Reaction	Final Concentration
Molecular Biology Grade Water	To 50 uL total	N/A
1 M Tris HCl pH 8.5	1.25 uL	25 mM
1 M KCl	2.5 uL	50 mM
25 mM MgCl2	5 uL	2.5 mM
10 mM dNTPs	1 uL	0.2 mM each dNTP
10 uM forward primer	1 uL	0.2 uM
10 uM reverse primer	1 uL	0.2 uM
Cheetah™ PEA-PLEX Taq	1 uL	0.1 U/uL
Template DNA	x uL	<1 ug total

Three-step fast cycling protocol

Cycling Step	Temperature	Hold Time	Number of Cycles
Enzyme Activation	95°C	2 minutes	1
Denaturation	95°C	1-15 seconds	25-35
Annealing	5°C below primer Tm	5-30 seconds	
Extension	72°C	1 minute per kb	
Final Extension	72°C	5 minutes	1

Analysis

Analyze 10 uL of the PCR reaction by agarose gel electrophoresis to confirm successful amplification of the desired amplicon. PCR reactions may be stored at -20°C for downstream applications.

Related Products

Cat. No.	Product
29079	Cheetah™ FLEX HotStart Taq (5 U/uL, Enzyme Only)
29079-KIT	Cheetah™ FLEX HotStart Taq (500 U Taq with Buffer Pack)
31000	EvaGreen® Dye 20X in Water
31077	EvaGreen® Plus Dye 20X in Water
31079	EvaRuby™ Dye 20X in Water
29052	ROX Passive Reference Dye
29087	VeriFluor™ Far-Red Passive Reference Dye
31041-31042	Forget-Me-Not™ EvaGreen® qPCR Master Mix (Separate ROX)
31043-31044	Forget-Me-Not™ Universal Probe Master Mix (Separate ROX)
31078	N-Flux™ 5X Digital PCR Master Mix
40054	dNTP Mix, 10 mM each
41024	Water, Ultrapure Molecular Biology Grade
29051	EvaEZ™ Fluorometric DNA Polymerase Activity Assay
41041-41042	Precast GelRed® Agarose Gels, 1% Agarose/TAE
41043	EMBER™ Ultra DNA Gel Kit
41044	EMBER™ Ultra RNA Gel Kit
41011	GelRed® Prestain Plus 6X DNA Loading Dye
41003	GelRed® 10,000X in Water
41005	GelGreen® 10,000X in Water
41028	Agarose LE, Ultra-Pure Molecular Biology Grade
41029	GelRed® Agarose LE
41030	GelGreen® Agarose LE
22031	1X TAE (1L) Buffer Powder Packets
22032	1X TBE (1L) Buffer Powder Packets
41039	Go-Go™ Fast DNA Gel Running Buffer, 50X
31028	AccuClear® Ultra High Sensitivity dsDNA Quantitation Kit
31066	AccuGreen™ High Sensitivity dsDNA Quantitation Kit for Qubit®
31080	1 kb DNA Ladder in TE buffer
31081	100 bp DNA Ladder in TE buffer
31084	1 kb DNA Ladder, Ready-to-Load
31085	100 bp DNA Ladder, Ready-to-Load
E90005	Gel-Bright™ Laser Diode Gel Illuminator

Please visit our website at www.biotium.com for information on our life science research products, including our environmentally friendly EvaGreen® qPCR master mixes, Cheetah™ FLEX HotStart Taq, and Forget-Me-Not™ qPCR Master Mixes featuring Cheetah™ Taq.

AmpliTaq Gold is a registered trademark of Thermo Fisher Scientific; HotStarTaq is a registered trademark of Qiagen.