Revised: January 8, 2020

Product Information

Cheetah™ HotStart Taq DNA Polymerase

Catalog Number: 29050

Kit Contents

Component	Size
29050A: Cheetah™ HotStart Taq DNA Polymerase	1 x 500 units (100 uL at 5 units/uL)
29050B: Cheetah™ Taq Dilution Buffer, 10X (without Mg^{2+})	1 x 1.5 mL
29050C: 25 mM $MgCl_2$	1 x 1.5 mL

Storage and Handling

Cheetah™ Taq is supplied in a buffer containing Tris-HCl (pH 9.0), DTT, EDTA, KCl and glycerol. The product is shipped on blue ice and should be stored immediately at -20°C upon arrival. The 10X Cheetah™ buffer and $MgCl_2$ solution should be stored at either 4°C or -20°C. Product is stable for at least 12 months from date of receipt when stored as recommended.

Product Description

Cheetah™ HotStart Taq DNA Polymerase is a chemically modified Taq polymerase designed for reducing non-specific DNA amplification due to primer-dimer formation in PCR. Cheetah™ Taq also has better shelf life than AmpliTaq Gold® due to its unique chemical modication, which is less likely to form intramolecular cross-links. The activation time for Cheetah™ Taq is only about 2 minutes at 95°C, which is 5 to 10 times faster than that for AmpliTaq Gold® or HotStarTaq®. Cheetah™ Taq is also superior to antibody-based hot-start Taq polymerases (such as those from Invitrogen, BioRad, Promega, and Takara) because it is free of animal DNA and its activity is completely suppressed prior to activation. Furthermore, unlike AmpliTaq Gold®, activation of Cheetah™ Taq is relatively insensitive to pH, permitting use of reaction buffers between pH 6 and pH 10.

Reaction Setup

Set up PCR reactions using the following final concentrations of reaction components:

Reaction component	Final concentration
10X Cheetah™ Buffer	1X
$MgCl_2$	1.5-3.5 mM
Primers	0.1-1 uM each primer
dNTPs	0.2 mM of each dNTP
Cheetah™ Taq	0.02-0.1 unit/uL

Cycling Protocols

Choice of cycling protocol depends on your instrument capability and on the nature of your amplicon. If your instrument does not support fast cycling, use the parameters recommended in your instrument manual.

1. Two-step fast cycling protocol
   This cycling protocol should be applicable to most amplifications where the primer melting temperature (Tm) are designed to be 60°C.

Cycling Step	Temperature	Holding Time	Number of cycles
Enzyme activation	95°C	2 min	1
Denaturation	95°C	1 - 15 sec	25-35
Annealing / Extension / Data acquisition	60°C	1 minute per kb	
Dissociation / Melt curve	Set up as per instrument guidelines		

2. Three-step fast cycling protocol
   Use this protocol when optimal primer annealing and extension temperatures are desired.

Cycling Step	Temperature	Holding Time	Number of cycles
Enzyme activation	95°C	2 min	1
Denaturation	95°C	1 - 15 sec	25-35
Annealing	50°C	5 - 30 sec	
Extension / Data acquisition	72°C	1 minute per kb	
Dissociation / Melt curve	Set up as per instrument guidelines		

Related Products

Catalog number	Product
31043, 31044	Forget-Me-Not™ Universal Probe qPCR Master Mix
31045	Forget-Me-Not™ EvaGreen® qPCR Master Mix (Low ROX)
31046	Forget-Me-Not™ EvaGreen® qPCR Master Mix (High ROX)
31078	N-Flux™ 5X Digital PCR Master Mix
29051	EvaEZ™ Fluorometric Polymerase Activity Assay Kit
31077	EvaGreen® Plus Dye, 20X in Water
31000	EvaGreen® Dye, 20X in water
40054	dNTP Mix, 10 mM Each
40053	dNTP Mix, 25 mM Each
40052	dNTP Set, 100 mM Each
29054	HotStart Polymerase Modification Kit
40069	PMAxx™, 20 mM in water, for viability PCR
E90003	Gel-Bright™ LED Gel Illuminator
41003	GelRed® Nucleic Acid Gel Stain, 10,000X in water
41029	GelRed® Agarose LE
41030	GelGreen® Agarose LE
41028	Agarose LE, Ultra-Pure Molecular Biology Grade
31022	Ready-to-Use 1 kb DNA Ladder
31032	Ready-to-Use 100 bp DNA Ladder

Please visit our website at www.biotium.com for information on our life science research products, including environmentally friendly EvaGreen® qPCR master mixes, fluorescent CF® dye antibody conjugates and reactive dyes, apoptosis reagents, fluorescent probes, and kits for cell biology research.

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