GoTaq® Polymerase Family

GoTaq Green Master Mix, GoTaq Flexi DNA Polymerase and GoTaq DNA Polymerase

Go for Performance

Experience improved PCR performance with the new GoTaq buffer and enzyme formulations, which offer robust amplification equal to and in some cases superior to standard *Taq* DNA Polymerases. You can directly substitute any GoTaq Polymerase[a] in your current PCR[b] application without changing cycling parameters. GoTaq Flexi DNA Polymerase allows you to optimize enzyme and magnesium concentrations, and GoTaq DNA Polymerase provides improved amplification with the convenience of a reaction buffer that already contains magnesium. Set up reactions with the 5X Green Buffer for direct-to-gel analysis following amplification or with the 5X Colorless Buffer for post-amplification analysis by fluorescence or absorbance without prior purification of the DNA. Get your reaction together faster using the GoTaq Green Master Mix. This easy to use 2X master mix contains GoTaq Polymerase, GoTaq Green Buffer, dNTPs and magnesium.

Go Directly to Gel

Go directly from thermal cycler to gel analysis with the GoTaq Family products. The buffers provided with these enzymes contain a compound that increases sample density, so that samples sink easily into the wells of an agarose gel. The Green Buffer contains two dyes (yellow and blue) that separate to allow easy monitoring during electrophoresis. The blue dye comigrates at the same rate as 3–5kb DNA fragments in a 1% agarose gel. The yellow dye migrates ahead of primers (<50bp).

Go for Convenience

GoTaq Green Master Mix is a pre-mixed, ready-to-use solution containing GoTaq DNA Polymerase, dNTPs, $MgCl_2$, and reaction buffer. The master mix improves speed and efficiency of reaction set-up by providing the enhanced performance of GoTaq DNA Polymerase in a convenient, easier to use, time-saving format. GoTaq Green Master Mix contains the same yellow and blue dyes and the compound increases sample density, making it ideal for agarose gel electrophoresis. Save twice the time during PCR amplification and gel electrophoresis by using GoTaq Green Master Mix.

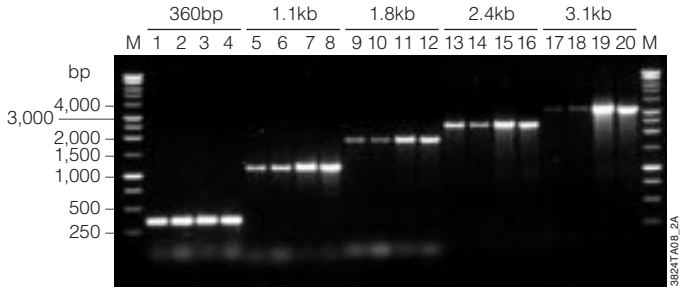

Figure 1. Comparison of amplifications using *Taq* DNA Polymerase in Storage Buffer B, *Taq* DNA Polymerase in Storage Buffer A, and GoTaq® DNA Polymerase. A 360bp human α-1-antitrypsin fragment (3.3ng human genomic DNA), 1.1kb mouse IL-1β fragment (1ng mouse genomic DNA), 1.8kb human APC gene fragment (3.3ng human genomic DNA), 2.4kb human APC gene fragment (33ng human genomic DNA), and 3.1kb human APC gene fragment (75ng human genomic DNA) were generated using the indicated amounts of template DNA. Amplifications were performed with *Taq* DNA Polymerase in Storage Buffer B (Cat.# M1661; lanes 1, 5, 9, 13, 17), *Taq* DNA Polymerase in Storage Buffer A (Cat.# M1861; lanes 2, 6, 10, 14, 18) in Thermophilic DNA Polymerase Buffer supplemented with 1.5mM $MgCl_2$, and GoTaq® DNA Polymerase in Colorless (lanes 3, 7, 11, 15, 19) or Green (lanes 4, 8, 12, 16, 20) GoTaq® Reaction Buffer. Lane M, BenchTop 1kb DNA Ladder (Cat.# G7541). All reactions were performed with PCR Nucleotide Mix (Cat.# C1141).

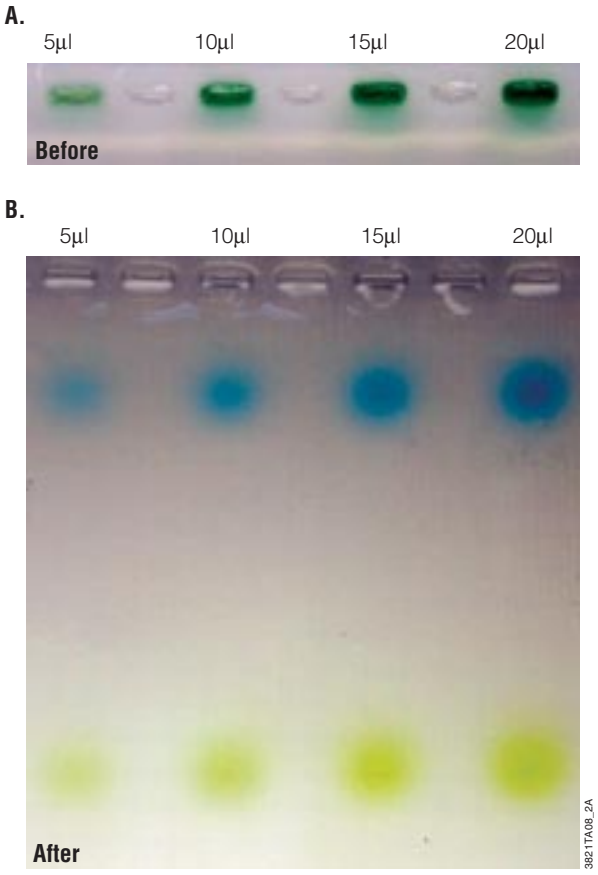

Figure 2. GoTaq DNA Polymerase reactions with 1X Green GoTaq Reaction Buffer before and after electrophoresis show separation of the yellow and blue dyes.

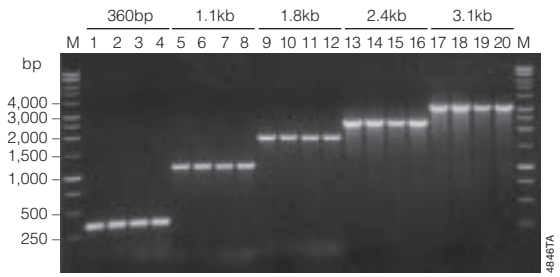

Figure 3. Comparison of amplification reactions using GoTaq® DNA Polymerase and GoTaq® Flexi DNA Polymerase. A 360bp α-1-antitrypsin fragment from 3.3ng Human Genomic DNA (Cat.# G3041), a 1.1kb IL-1β fragment from 10ng Mouse Genomic DNA (Cat. # G3091), a 1.8kb APC fragment from 3.3ng Human Genomic DNA, a 2.4kb APC fragment from 33ng Human Genomic DNA and a 3.1kb APC fragment from 75ng Human Genomic DNA were amplified using the indicated amounts of template DNA. Amplifications were performed using either GoTaq® DNA Polymerase with Colorless GoTaq® Reaction Buffer (lanes 1, 5, 9, 13, 17), GoTaq® Flexi DNA Polymerase with Colorless GoTaq® Flexi Buffer (lanes 2, 6, 10, 14, 18), GoTaq® DNA Polymerase with Green GoTaq® Reaction Buffer (lanes 3, 7, 11, 15, 19), or GoTaq® Flexi DNA Polymerase with Green GoTaq® Flexi Buffer (lanes 4, 8, 12, 16, 20). Lane M, BenchTop 1kb DNA Ladder (Cat.# G7541). All amplifications were performed with PCR Nucleotide Mix (Cat.# C1141) as the dNTP source.

Go Directly to Measurement

Experience enhanced amplification even if your application requires direct absorbance or fluorescence measurements. Both GoTaq Flexi and GoTaq DNA Polymerases are supplied with 5X GoTaq Colorless and Green Reaction Buffers. Use of the Colorless Buffer allows direct measurement by fluorescence or absorbance after amplification is complete. If gel analysis is also required, reactions containing the Colorless Buffer can be loaded directly into the wells of an agarose gel, but tracking dye will need to be added in order to monitor the progress of the electrophoresis. The dyes in the GoTaq Green Reaction Buffer absorb light between 225nm and 300nm, making standard A_{260} determination of DNA concentration unreliable. The dyes also have excitation peaks at 488nm and 600–700nm, which correspond to the excitation wavelengths used in common fluorescence detection instruments. The Colorless Buffer has the same formulation as the Green Buffer but does not include dyes.

Compatible with Upstream & Downstream Applications

GoTaq amplifications can be used downstream of first-strand cDNA synthesis reactions generated using the AMV RT-based Reverse Transcription System (Cat.# A3500) or the ImProm-II™ Reverse Transcription System (Cat.# A3800). PCR products generated using any GoTaq Family product can be subcloned into the pGEM®-T and pGEM®-T Easy Vector Systems (Cat.# A3600, A1360). Reactions are also compatible with the TnT® T7 Quick for PCR DNA In Vitro Transcription/Translation System (Cat.# L5540). Amplimers generated with either reaction buffer can be purified by any Promega PCR Purification System, e.g. the Wizard® SV Gel and PCR Clean-Up System (Cat.# A9281). These systems remove the dyes to below detectable absorbance levels.

GoTaq® Green Master Mix

Supplied with 2X GoTaq Green Master Mix and Nuclease-Free Water. At the final 1X concentration, each reaction will contain 2.5u of GoTaq DNA Polymerase, 200µM of each dNTP and 1.5mM $MgCl_2$.

GoTaq Flexi DNA Polymerase

Supplied with a tube of 25mM $MgCl_2$, GoTaq Flexi DNA Polymerase allows optimization of the magnesium concentration in your reactions. The 2,500u, 5,000u, and 10,000u sizes are provided in multiple packs of 500u each.

GoTaq DNA Polymerase

GoTaq DNA Polymerase is supplied with 5X Green GoTaq Reaction Buffer and 5X Colorless GoTaq Reaction Buffer. Both buffers contain $MgCl_2$ at a concentration of 7.5mM, giving a final concentration of 1.5mM in the 1X reaction.

- **Save Time:** Go directly from thermal cycler to gel analysis. Green GoTaq Reaction Buffer serves as both reaction buffer and gel loading solution.
- **Experience better PCR performance:** Take advantage of a GoTaq DNA Polymerase, a new *Taq* formulation with robust performance equivalent to and in some cases superior to standard *Taq* DNA polymerase.
- **Keep your Cycling Conditions:** Directly subsititute in your current PCR applications. No need to change cycling parameters.
- **Performance Guarantee:** Promega's PCR systems, enzymes and reagents are proven in PCR to ensure reliable, high-performance results. If you are not completely satisfied with any Promega PCR product, we will send a replacement or refund your account.
- **Available in Custom and Bulk Configurations:** Learn more about our custom options for this product at: **www.promega.com/myway/**

Ordering Information

Product	Size	Cat. #
GoTaq® Green Master Mix (25µl of 2X GoTaq Green Master Mix per reaction)	100 rxn	M7122
	1,000 rxn	M7123
GoTaq® Flexi DNA Polymerase	100u	M8291
	500u	M8295
	2,500u (5 x 500u)	M8296
	5,000u (10 x 500u)	M8297
	10,000u (20 x 500u)	M8298
GoTaq® DNA Polymerase	100u	M3001
	500u	M3005
	2,500u	M3008

[a] Certain applications of this product are covered by patents issued and applicable in certain countries. Because purchase of this product does not include a license to perform any patented application, users of this product may be required to obtain a patent license depending upon the particular application and country in which the product is used.

[b] The PCR process is covered by patents issued and applicable in certain countries*. Promega does not encourage or support the unauthorized or unlicensed use of the PCR process. In the U.S., effective March 29, 2005, U.S. Pat. Nos. 4,683,195, 4,965,188 and 4,683,202 will expire. In Europe, effective March 28, 2006, European Pat. Nos. 201,184 and 200,362 will expire.

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