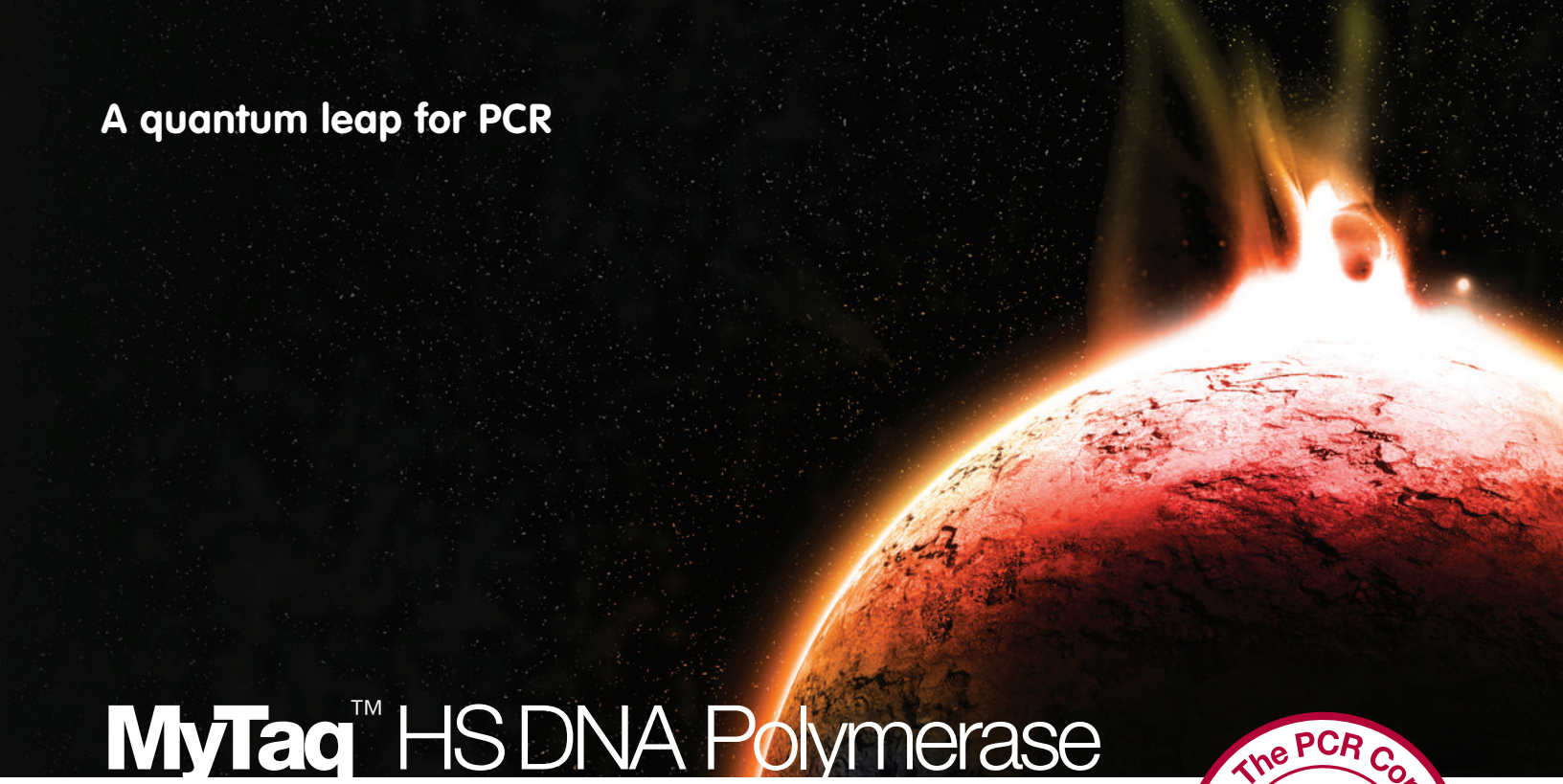

A quantum leap for PCR

MyTaq™ HS DNA Polymerase

The PCR Company • BIOLINE since 1992 • The PCR Company

- **New generation of antibody-based hot-start polymerase**
- **Highest specificity and superior performance**
- **Novel buffer system, including ultra-pure dNTPs and $MgCl_2$**
- **Fast hot-start PCR reactions**
- **Convenient all-in-one master mix**

The MyTaq™ HS product range is a new generation of very high performance, antibody-mediated hot-start PCR products, developed by Bioline and designed to give outstanding results with complex genomic DNA templates. MyTaq HS uses the latest technology in PCR enzyme design, engineered to increase affinity for DNA, so resulting in significant improvements in yield, sensitivity and speed. The enzyme is supplied with an industry-leading novel buffer system, specifically formulated and validated to the unique properties of MyTaq HS, making it the perfect choice for all your hot-start PCR assays.

MyTaq HS - For all applications

This new generation hot-start DNA polymerase from Bioline has been validated with a full range of templates and is perfectly suited to the following applications:

High-throughput PCR	Assays with prolonged reaction setup at room temp	Challenging targets susceptible to mispriming
Colony PCR	Multiplexing	Specific amplification of difficult templates (GC rich)
Genotyping	TA cloning	Two-Step RT-PCR

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BIOLINE
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MyTaq HS - Highest specificity and improved sensitivity

MyTaq HS employs a highly purified thermostable *Taq* DNA polymerase powered by antibody-mediated hot-start that drives highly specific and efficient PCR. MyTaq HS has the added convenience of room temperature reaction assembly, thus reducing non-specific amplification and primer-dimer formation. This new hot-start enzyme preparation from Bioline is supplied with MyTaq buffer system, a proprietary formulation containing ultra-pure dNTPs, $MgCl_2$ and enhancers at optimal concentrations, removing the need for optimization and delivering superior amplification.

MyTaq HS - Higher yields with superior performance

Genomic DNA and other difficult templates that previously required optimization trials can now be easily and reproducibly amplified with MyTaq HS. An example of this is Colony PCR, in which conventional polymerases are easily inhibited by bacterial cell debris and components of the culture media, often resulting in inconsistent amplification such that only short fragments of cloned inserts can be amplified. MyTaq HS is extremely tolerant to a wide range of common PCR inhibitors (Fig 1), permitting amplification of longer fragments of cloned inserts (fig. 1).

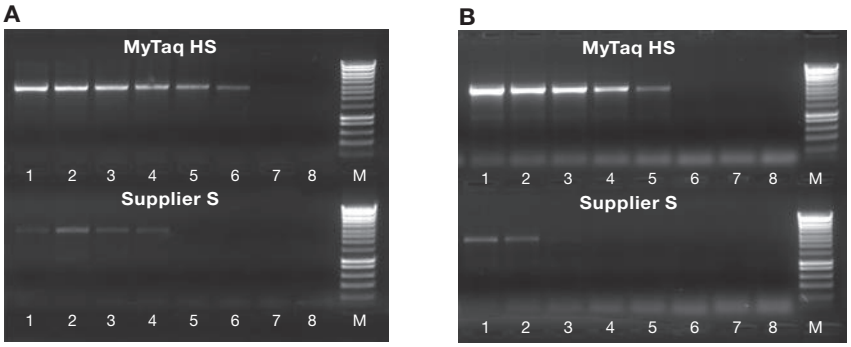

Fig. 1 Robustness of MyTaq HS in Colony PCR.
A 2.6Kb fragment of human genomic DNA was cloned into M13 vectors and transformed into *E.coli* cells. 1ml of a 1:16 dilution of an overnight culture of these cells was used directly in a 50µl PCR reaction.
A) 2µl increments of agar were added (Lanes 1-8 respectively).
B) 2µl increments of LB were added (Lanes 1-8 respectively).
Reaction conditions were 95°C for 3 min, followed by 35 cycles of 95°C for 15s, 60°C for 15s and 72°C for 2mins. Marker is HyperLadder I (M) (Cat No. BIO-33025). MyTaq HS DNA polymerase was more resistant to inhibition than that of supplier S, making it ideal for Colony PCR, even from liquid overnight cultures, offering improved workflows particularly for high-throughput assays.

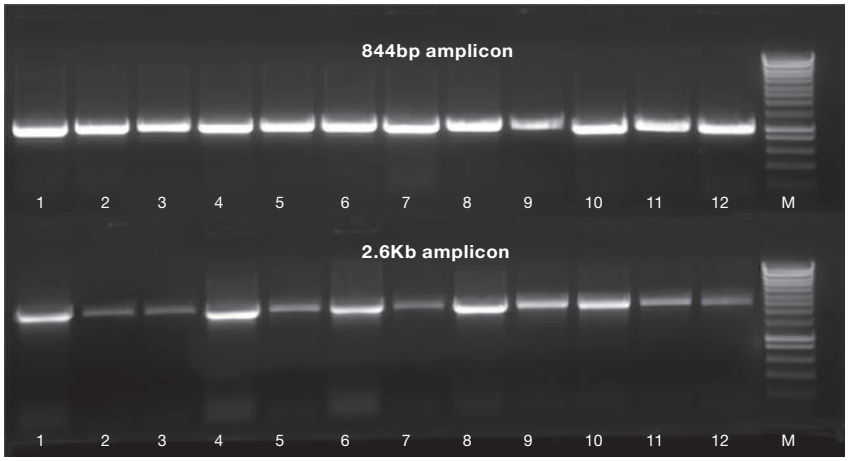

Fig. 2 Colony PCR of long fragments
E.coli transformed with M13 carrying the 2.6 kb or an 884 bp insert were plated out and 12 colonies were picked with tooth-picks and washed directly into MyTaq buffer and amplified using MyTaq HS.
Reaction conditions were 95°C for 3 min, followed by 30 cycles of 95°C for 15s, 60°C for 15s and 72°C for 2mins. Marker is HyperLadder I (M) (Cat No. BIO-33025). The results show that fragments up to 3kb can be reliably amplified using fast cycling conditions with MyTaq HS DNA polymerase. This allows the opportunity to interrogate full-length inserts and facilitates the rapid identification of correct size plasmids.

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MyTaq HS - Faster reaction times

The advanced formulation of MyTaq HS only requires a one minute activation time and allows fast cycling conditions to be used, thus considerably reducing the reaction time (to under 30 minutes), without compromising PCR specificity or yield (as illustrated in fig. 3). This makes MyTaq HS suitable for both routine and high-throughput PCR.

The superior robust properties of MyTaq HS have been further demonstrated by the use of an extremely fast protocol (<15 minutes), in which only MyTaq was capable of amplifying a 900bp fragment of genomic DNA, as compared to other suppliers (fig. 4).

MyTaq HS - Direct gel loading

MyTaq HS is also supplied as MyTaq HS Red DNA Polymerase, which includes a 5x colored reaction buffer with an inert red dye. Following PCR, samples can be loaded directly onto the agarose gel without the need for a loading buffer, since the mix is of sufficiently high density to sink to the bottom of the well.

MyTaq HS - Premixes for increased reproducibility

MyTaq HS 2x Mix and MyTaq HS Red 2x Mix contain all the reagents (including stabilizers) necessary for trouble-free hot-start PCR reaction set-up. The unique mixes, supplied in a convenient single tube, reduce the number of pipetting steps and facilitate greater efficiency, throughput and reproducibility.

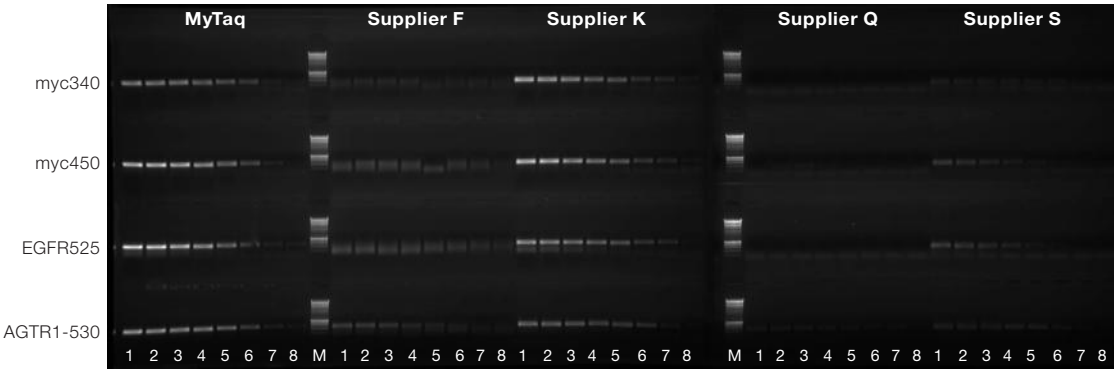

Fig. 3 Fast amplification (26.3 minutes) was carried out on a range of human genomic genes
A) A 340bp and B) a 450bp fragment of the myc gene, C) a 525bp fragment of the EGFR gene and D) a 530bp fragment of the AGRI1 gene were amplified using MyTaq HS and the results were compared with amplifications using hot-start DNA polymerases from other suppliers. The process used a serial dilution of human genomic DNA (100ng, 33ng, 10ng, 4ng, 1ng, 33pg, 10pg and 3pg genomic DNA, lanes 1-8 respectively), incubated for 3 min at 95ºC followed by 35 cycles of 15s at 95ºC, 55ºC and 72ºC. Marker is HyperLadder I (M) (Cat No. BIO-33025). MyTaq HS performed well across all four human genes.

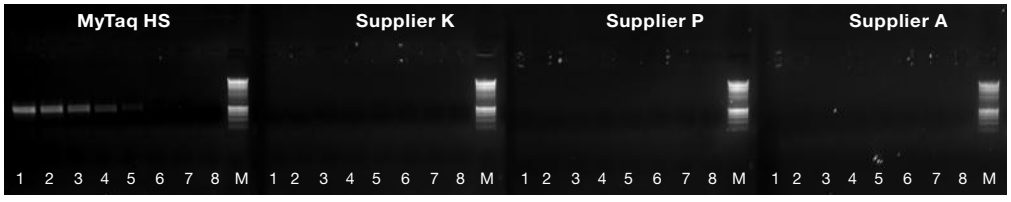

Fig. 4 Ultra-fast (12.3 minutes) amplification of the human AGFR1 gene
A 900bp fragment of the AGTR1 gene was amplified with MyTaq HS Mix and hot-start *Taq* Polymerases from other suppliers. A serial dilution of human genomic DNA (100ng, 33ng, 10ng, 4ng, 1ng, 33pg, 10pg and 3pg, lanes 1-8 respectively) was used and incubated at 95°C for 3 min, followed by 35 cycles of 95°C for 5s, 55°C for 1s and 72°C for 15s. Marker is HyperLadder I (M) (Cat No. BIO-33025). Only MyTaq HS was capable of amplifying a 900bp fragment of human genomic DNA under such fast conditions.

MyTaq™ HS DNA Polymerase

Please visit **www.bioline.com/mytaq** for more information.

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Ordering Information

PRODUCT	PACK SIZE	PRESENTATION	CAT NO.
MyTaq HS DNA Polymerase	250 Units	1 x 50µl	BIO-21111
MyTaq HS DNA Polymerase	1000 Units	1 x 200µl	BIO-21112
MyTaq HS DNA Polymerase	2500 Units	2 x 250µl	BIO-21113
MyTaq HS Red DNA Polymerase	250 Units	1 x 50µl	BIO-21114
MyTaq HS Red DNA Polymerase	1000 Units	1 x 200µl	BIO-21115
MyTaq HS Red DNA Polymerase	2500 Units	2 x 250µl	BIO-21116
MyTaq HS Mix, 2x	200 Reactions	4 x 1.25ml	BIO-25045
MyTaq HS Mix, 2x	1000 Reactions	20 x 1.25ml	BIO-25046
MyTaq HS Red Mix, 2x	200 Reactions	4 x 1.25ml	BIO-25047
MyTaq HS Red Mix, 2x	1000 Reactions	20 x 1.25ml	BIO-25048

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