

Bringing reliability to epigenetics

EPIK™ Amplification Kit

EPIK Amplification Kit has been engineered to overcome the challenges associated with bisulfite-modified DNA templates, to deliver significantly increased reliability, sensitivity and PCR success rates, even with longer amplicons and low concentrations of template DNA. Powered by MyTaq™ HS and EPIKORE™ technology, the high speed and enhanced specificity of EPIK™ Amplification Kit also makes it highly suited for high-throughput epigenetic assays and bisulfite sequencing applications.

- **Outstanding reliability** - Engineered for best-in-class epigenetic analysis time after time
- **EPIKORE™ buffer system** - Specially developed for bisulfite-modified and GC-rich DNA templates
- **Hot-start system powered by MyTaq™ HS technology** - Extreme specificity and speed in PCR
- **Powerful performance** - Enhanced polymerization for longer amplicons
- **Superior results** - Higher yield even with low DNA template

Applications

- PCR from bisulfite-modified, uracil containing DNA (up to 1.5kb)
- PCR from difficult DNA templates e.g. GC-rich
- Bisulfite-restriction PCR e.g. COBRA
- TA cloning
- Bisulfite genomic sequencing workflows
- Pyrosequencing workflows

United Kingdom
Tel: +44 (0)20 8830 5300

Germany
Tel: +49 (0)3371 681 229

USA
Toll Free: 888 257 5155

Australia
Tel: +61 (0)2 9209 4180

www.bioline.com/epigenetics

Singapore
Toll Free: +1800 BIOLINE (2465463)



A Meridian Life Science® Company

EPIK™ Amplification Kit

Best in class epigenetic analysis

EPIK Amplification Kit is a new generation hot-start PCR kit specifically engineered to overcome common epigenetic challenges and deliver highly reliable, ultra-sensitive amplification from bisulfite-modified template DNA. Epigenetics describes the heritable changes in gene function that occur independent to the DNA sequence. The molecular basis of epigenetic gene regulation is complex, but involves modifications to the DNA itself or to DNA accessory proteins. Methylation of DNA is one of the best-studied epigenetic phenomena with bisulfite-modification of DNA considered to be the 'gold standard' to study DNA methylation patterns.

Powered by MyTaq™ HS

A consequence of this harsh treatment is the formation of highly fragmented single-stranded DNA, with depurination being identified as the main cause of fragmentation¹. This degradation of DNA has been reported to affect between 84-96% of the DNA². Furthermore, certain PCR enzymes (like Pfu) strongly bind to template-strand uracil and stall polymerization, resulting in reduced product yield³. EPIK Amplification Kit is powered by the proven MyTaq HS to ensure the highest yields possible are obtained.

EPIKORE™ buffer system

EPIK Amplification Kit features a novel buffer system, EPIKORE™ that has been specially engineered to overcome problems associated with bisulfite-modified, uracil-containing DNA templates. This offers significant improvements in reliability, yield and sensitivity when compared to existing epigenetic kits on the market. EPIK was demonstrated to deliver truly unrivalled, market-leading performance, even with longer amplicons (1.5kb) (fig. 1).

Sensitive amplification

The sensitivity of EPIK Amplification Kit has been shown to offer significantly improved amplification success rates even with low template concentrations (<0.5ng) of bisulfite-modified DNA. It is unrivalled when compared to the best performing alternative kit proving EPIK delivers a new standard of reliability to epigenetics (fig. 2).

References

1. Raizis, A.M. *et al.*, A bisulfite method of 5-methylcytosine mapping that minimizes template degradation. *Anal. Biochem.* 226,161-166 (1995).
2. Grunbaum, C. *et al.*, Bisulfite genomic sequencing: systematic investigation of critical experimental parameters. *Nucleic Acids Res.* 29,E65-65 (2001).
3. Shuttleworth, G. *et al.*, Recognition of the pro-mutagenic base uracil by family B DNA polymerases from Archaea. *J. Mol. Biol.* 337, 621-634 (2004).

EPIK, EPIKORE, MyTaq and HyperLadder are trademarks of Bioline



Fig. 1 EPIK Amplification Kit offers unrivalled performance from bisulfite-modified DNA templates

Primers were designed for bisulfite-modified sequences of the ELK1 gene (323bp, 600bp, 810bp, 1kb and 1.5kb). PCR was performed with 1) EPIK Amplification Kit and kits from suppliers 2) Z, 3) Q and 4) I according to the manufacturers' recommended conditions. The results illustrate that only EPIK was able to amplify all five fragments successfully and so offers significantly improved performance with bisulfite-modified DNA. Marker - HyperLadder™ 100bp Plus (M)

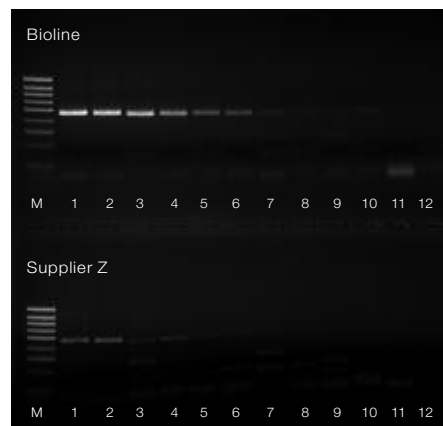


Fig. 2 EPIK Amplification Kit delivers extremely sensitive and highly specific amplification even from low amounts of DNA template

A two-fold serial dilution from 35ng bisulfite-modified DNA (lanes 1-12) was used to amplify a 474bp fragment of the ELK1 gene with EPIK Amplification Kit and enzyme from supplier Z, using the recommended conditions. The results illustrate the unrivalled sensitivity of EPIK compared to supplier Z, even with low template concentrations. Marker - HyperLadder™ 100bp (M).

Ordering Information

PRODUCT	PACK SIZE	CAT NO.
EPIK Amplification Kit	200 Reactions	BIO-66025
	500 Reactions	BIO-66026

PSGBL0215V1.1

United Kingdom

Tel: +44 (0)20 8830 5300

Germany

Tel: +49 (0)3371 681 229

USA

Toll Free: 888 257 5155

Australia

Tel: +61 (0)2 9209 4180

www.bioline.com/epigenetics

Singapore

Toll Free: +1800 BIOLINE (2465463)



A Meridian Life Science® Company