

# ENZYMES

## KOD Multi & Epi

CAT# KME-101

### SOURCE

Recombinant (E. coli)

### SPECIFICATIONS

**PCR Assay** 10kbp KRAS gene fragment could be amplified using human genomic DNA

### PRODUCT FORMAT

PART #	DESCRIPTION	FORMAT	CONTENTS
KME-101	KOD Multi & Epi DNA Polymerase	Kit	KOD Multi & Epi DNA Polymerase (200 units) 200uL x 1 2x PCR Buffer 1.7ml x 3
KME-159 (TBC)	KOD Multi & Epi DNA Polymerase	EA	KOD Multi & Epi DNA Polymerase (20mL) 20KU
KME-1B1 (TBC)	KOD Multi & Epi DNA Polymerase PCR Buffer	EA	2x PCR Buffer 500ml

### DESCRIPTION

KOD Multi & Epi DNA Polymerase is a high-fidelity PCR enzyme based on genetically modified KOD DNA polymerase (UKOD). KOD Multi & Epi DNA Polymerase is applicable for Multiplex PCR. KOD Multi & Epi DNA Polymerase can be used for the preparation of DNA fragments for next-generation sequencing and capillary sequencing via cloning because the enzyme exhibits about 11-fold higher PCR fidelity.

Addition of the Elongation Accelerator significantly reduces amplification bias during PCR. KOD Multi & Epi DNA Polymerase contains two types of anti-KOD DNA polymerase antibodies that inhibit the polymerase and its 3'→5' exonuclease activity, thus allowing for Hot Start PCR.

KOD Multi & Epi DNA Polymerase can be applied to various purposes such as a) multiplex PCR, b) bisulfite PCR in epigenetics research, and c) metagenomics research. This modified enzyme enables amplification from templates containing uracils (U) or using primers containing inosines (I) and uracils (U).

### CHARACTERISTICS

- Applicable for Multiplex PCR
- Amplification from crude samples
- Homogeneous amplification (low bias)
- High fidelity and high efficiency

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**SEKISUI**  
DIAGNOSTICS

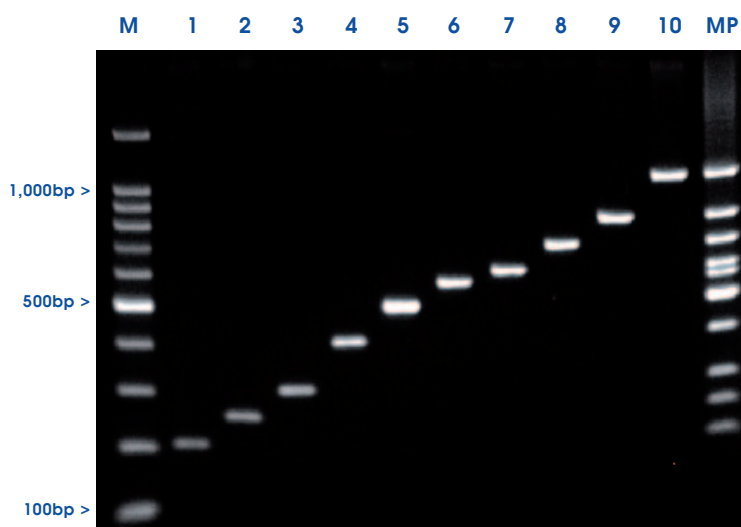
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## APPLICATION DATA

### PCR Performance in Multiplex PCR

The small targets from 200 to 1,000bp and the large target from 1 to 10kb were amplified by single-plex or multiplex PCR. Each target was successfully amplified by both single-plex and multiplex PCR.

#### SMALL TARGET: 200~1,000bp



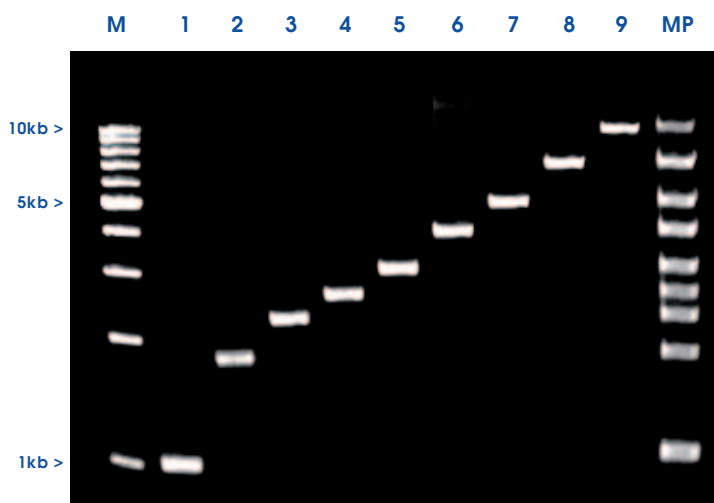
**Sample**  
Human genomic DNA 50ng

**Primer concentration**  
0.3mM each

**Multiplex PCR cycle**  
4C, 2 min  
98C, 10 sec  
68C, 30 sec (25 cycles)

**M:** 100bp DNA Ladder  
1: DDB2 200bp  
2: FANCG 250bp  
3: HBG 300bp  
4: CDH1 400bp  
5: Chrom9 500bp  
6: ERCC4 550bp  
7: HRAS 600bp  
8: PRF1 700bp  
9: BRCA1 800bp  
10: CDK4 1,000bp  
MP: Multiplex PCR 1-10

#### LARGE TARGET: 1~10kb



**Sample**  
Human genomic DNA 50ng

**Primer concentration**  
0.3mM each

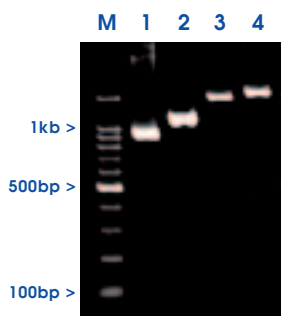
**Multiplex PCR cycle**  
94C, 2 min  
98C, 10 sec  
68C, 30 sec (25 cycles)

**M:** 1kb DNA Ladder  
1: Chrom9 1kb  
2: MSH6 1.8kb  
3: BRCA2 2.3kb  
4: WT-1 2.5kb  
5: FNCE 3kb  
6: RAD51D 4kb  
7: KRAS 5kb  
8: BRCA1 7kb  
9: DDB2 10kb  
MP: Multiplex PCR 1-9

## APPLICATION DATA continued

### Amplification from Bisulfite-Treated DNA

The target DNAs (917-1,583bp) were amplified using bisulfite-treated CpG-methylated Jurkat genomic DNA. All targets were successfully amplified using KOD Multi & Epi DNA Polymerase.



**Bisulfite treatment**  
EpiTect Fast DNA Bisulfite Kit (Qiagen)

**Primer concentration**  
0.3mM each

**Sample**  
55ng of bisulfite-treated DNA/50mL reaction

**Multiplex PCR cycle**  
94C, 2 min  
98C, 10 sec  
60C, 30 sec  
68C, 30 sec/kb (40 cycles)

**M: 100bp DNA Ladder**  
1: DDB2 917bp  
2: BRCA2 1,134bp  
3: APOE 1,487bp  
4: TGFb 1,583bp

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