ENZYMES

KOD SYBR qPCR Mix

CAT# QKD Range

SPECIFICATIONS

Concentration	40 reactions/mL
Functional Test	-1.000 ≤ correlation coefficient ≤ -0.990 3.920 ≤ slope ≤ -3.103
Bacterial Contamination	Ct ≥ 28

*Functional test -Amplification of a 582bp human β-globin region from dilutions of human genomic DNA standard and no-template control

PRODUCT FORMAT

PART #	DESCRIPTION	CONTENT/FORMAT
QKD-201	KOD SYBR qPCR Mix Kit	3x 1.67mL KOD SYBR qPCR Mix 1 x 250µL 50x ROX reference dye
QKD-259	KOD SYBR qPCR Mix	100mL KOD SYBR qPCR Mix

DESCRIPTION AND APPLICATION

KOD SYBR® qPCR Mix is a highly efficient 2x Master Mix for real-time PCR using SYBR® Green I and based on the KOD exo(-) DNA Polymerase. KOD exo(-) DNA Polymerase is a 3′→5′ exonuclease minus mutant developed based on KOD DNA polymerase from a hyperthermophilic Archaeon *Thermococcus kodakaraensis*. The master mix contains all the required components, except the ROX reference dye and primers (50x ROX reference dye is supplied separately with this kit). The master mix aids reaction setup, and improves the reproducibility of experiments. This product was optimized to be highly efficient and robust in the SYBR® Green assay.

CHARACTERISTICS

- Effective for GC rich targets: Quantitative analysis can be achieved even at GC contents greater than 70%
- Long target amplification (~2kb): Quantitative analysis can be achieved using long targets, up to 2kb
- High specificity: Optimization and hot start technology permit the highly specific amplification
- Effective amplification from crude samples. Can be used for genotyping or SNP analysis using crude specimens. Applicable crude samples: whole blood, nail, hair, root, oral mucosa, cultured cells, animal tissue, plant tissue
- Compatibility with various real-time cyclers: The reagent may be used in most real-time cyclers (i.e. Block type and glass capillary type)
- Library quantification: Can be used to achieve specific and accurate quantification of libraries bearing P5 and P7 adaptors which can be applied to flow cell amplification. Compatible with Illumina's instrument (ex. MiniSeq, MiSeq, HiSeq, NextSeq)

SEKISUI DIAGNOSTICS
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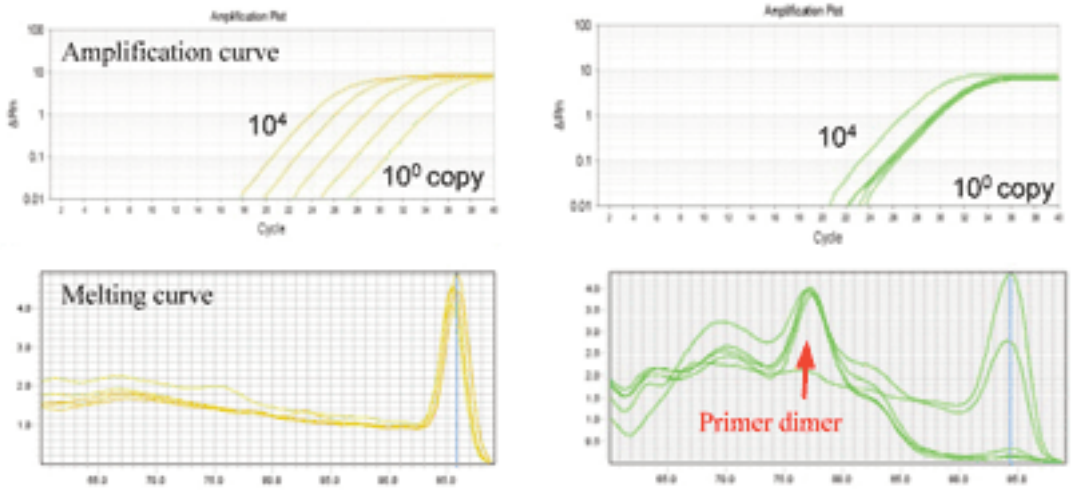
COMPARISON OF PROPERTIES WITH A CONVENTIONAL MASTER MIX

	CONVENTIONAL	KOD SYBR® qPCR Mix
Enzyme	Taq DNA	KOD DNA Polymerase (exo(-) mutant)
Amplification Size	70~150bp (Maximum: 300 bp)	70bp ~ 2kb
High GC Targets	Susceptible	Not susceptible
Inhibition by impurities In crude samples	Susceptible	Not susceptible (Suitable for amplification from crude specimens)

APPLICATION DATA

Enables the effective amplification of the targets, such as a high G/C(A/T) and/or a long target (up to 2kb).

GC rich targets (GC content: >70%) were amplified using various real-time PCR master mixes. The targets were amplified successfully and quantitatively using KOD SYBR® qPCR Mix. (ABI StepOnePlus®)



KOD SYBR® qPCR Mix

HIGH EFFICIENT MASTER Mix COMPANY A

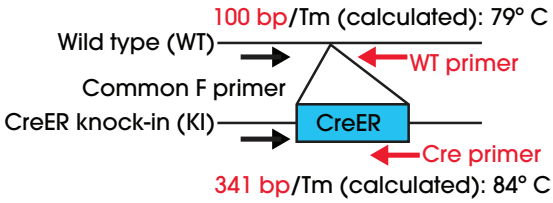
Target: IGF2R (189bp/GC content: 83%) Template: HeLa cDNA was synthesized using ReverTra Ace qPCR RT Kit (Code No. FSQ-101) with total RNA from HeLa cells

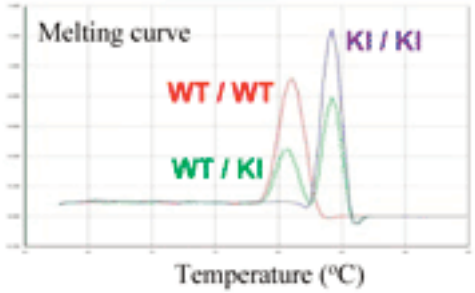
APPLICATION DATA continued

Enables the effective amplification from crude samples.

Genotyping of knock-in mice using mouse-tail lysates. (ABI 7500 Fast)

Primers were designed so that the amplicons were 100bp (Tm: 79°C) and 341bp (Tm: 84°C) for wild-type and knock-in, respectively. All genotypes were successfully detected.



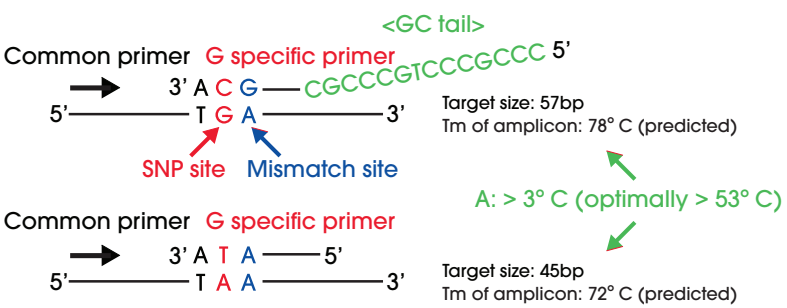


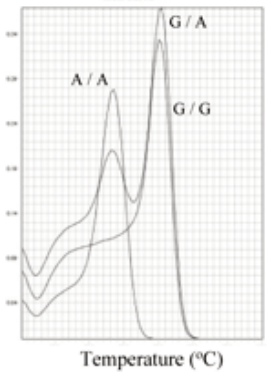
CYCLING CONDITION:
98°C 2min.
↓
98°C 10sec.
60°C 10sec.
68°C 30sec.
↓
Melting Curve Analysis

Template: Mouse tail lysate (alkaline lysis method) Primer Ratio: F: WT: KI: = 0.2: 0.2: 0.67mM (final) Sample: Mouse tail lysate 2µl/20µl reaction

One-tube ASP-PCR analysis using whole blood specimen. (ABI 7500 Fast)

SNP analysis was performed with a GC tailed primer from whole blood samples using KOD SYBR® qPCR Mix. All types of SNP were successfully determined by KOD SYBR® qPCR Mix. No signal was detected using the Taq-based conventional master mix (data not shown).





THE AMERICAS
Sekisui Diagnostics, LLC
One Wall Street
Burlington, MA 01803
Phone: 800 332 1042
Fax: 800 762 6311
engage@sekisuienzymes.com

INTERNATIONAL
Sekisui Diagnostics (UK) Limited
Liphook Way, Allington
Maidstone, Kent, ME16 0LQ, UK
Phone: +44 1622 607800
Fax: +44 1622 607801

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