

KAPA HRM FAST PCR Kits

High Resolution Melt (HRM) analysis is a technique for fast, high-throughput post-PCR analysis of genetic mutations or variance in nucleic acid sequences. The KAPA HRM FAST PCR Kit contains a convenient, ready-to-use master mix designed for the high performance detection of DNA sequence variations.

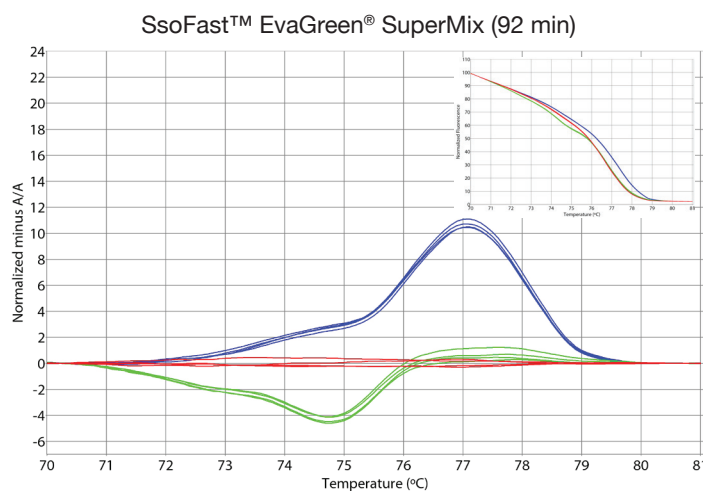
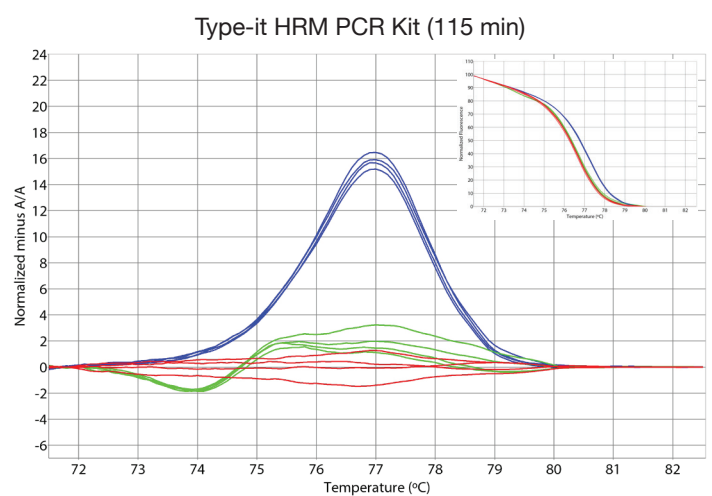
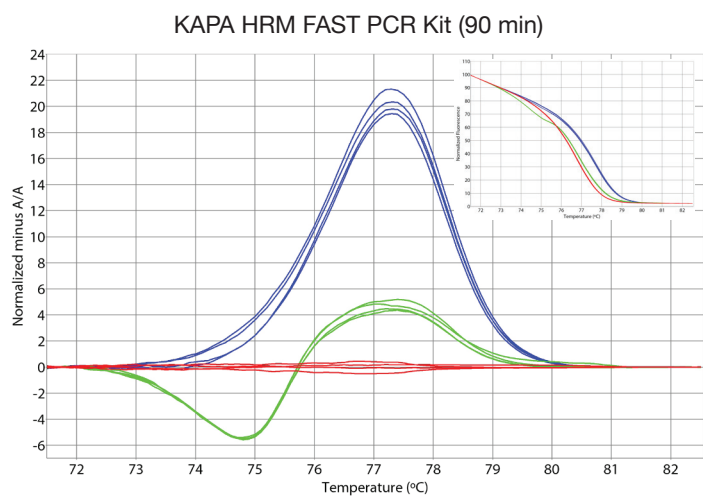
The KAPA HRM FAST Master Mix contains a novel DNA polymerase and buffer system, and EvaGreen® saturating dye optimized for maximum discrimination between sequence variants. Kits are ideally suited for:

- SNP genotyping
- Mutation discovery (gene scanning)
- Screening for heterozygosity
- DNA fingerprinting
- DNA methylation analysis

Engineered for fast and accurate detection of DNA sequence variations.

Accurate SNP genotyping with maximum sensitivity and speed.

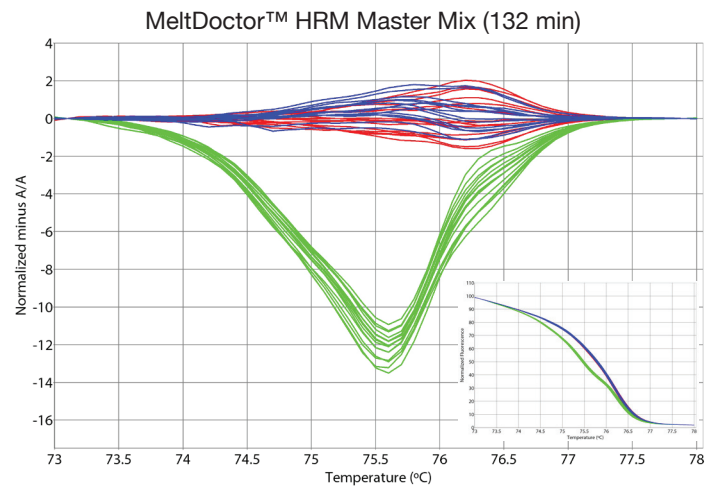
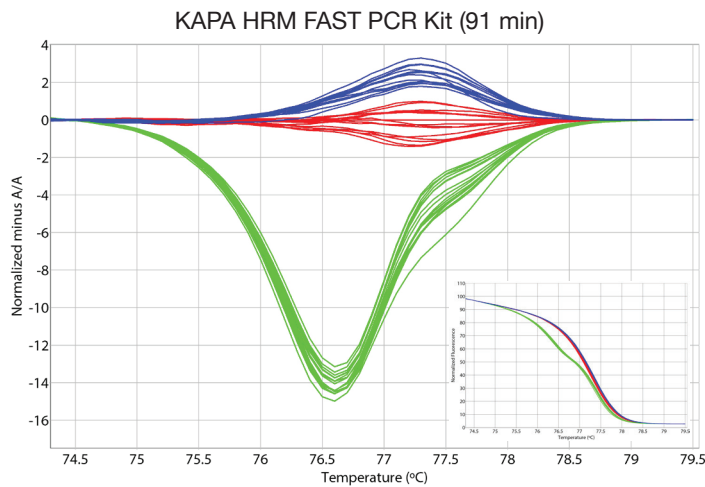
KAPA HRM FAST PCR Kits are engineered to maximize differences in melting behavior between sequence variants. Kits contain a novel DNA polymerase and buffer system that allows for fast PCR cycling and improved sensitivity. Single nucleotide polymorphism (SNP) genotyping is the most common application for HRM. In this example, KAPA HRM FAST is compared to other HRM kits when genotyping Type I SNP rs12913832 (G/A).



Genotyping of the Type I SNP rs12913832 (G/A) with the KAPA HRM FAST PCR Kit, QIAGEN Type-it HRM PCR Kit and Bio-Rad SsoFast™ EvaGreen® SuperMix. The Type I SNP rs12913832 is associated with expression of the OCA2 gene, and part of the eye color haplotype. Reactions (20 µl) contained 1X KAPA HRM FAST PCR Master Mix, 2.5 mM MgCl₂, 0.2 µM of each primer (targeting a 60 bp amplicon surrounding the SNP of interest) and 10 ng of human genomic DNA (all three genotypes, confirmed by sequencing). PCR and HRM was performed with the Corbett Rotor-Gene™ 6000 instrument, using a fast, 2-step cycling protocol (40 cycles) with 5 sec denaturation (95 °C) and 20 sec annealing/extension (60 °C). Competitor kits were used according to manufacturers' instructions, with the same template DNA samples.

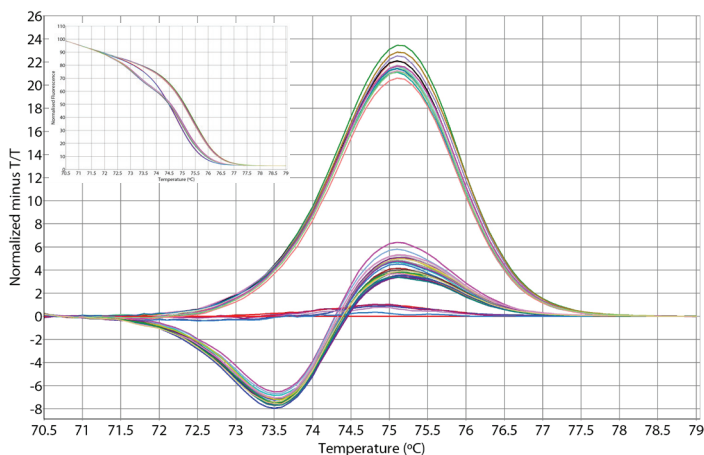
KAPA HRM FAST PCR Kits

Fast and reproducible detection of Type IV SNPs.



Genotyping of the Type IV SNP rs641805 (A/T) with the KAPA HRM FAST PCR Kit and ABI MeltDoctor™ HRM Master Mix. The Type IV SNP rs641805 is located on an intron of the dihydropyrimidine dehydrogenase (DPD) gene, which catalyzes the reduction of uracil and thymine and is associated with the degradation of certain chemotherapeutic drugs. Reactions (20 μ l) contained 1X KAPA HRM FAST PCR Master Mix, 2.5 mM $MgCl_2$, 0.2 μ M of each primer (targeting a 124 bp amplicon surrounding the SNP of interest) and 10 ng of human genomic DNA (all three genotypes, confirmed by sequencing). PCR and HRM was performed with the Corbett Rotor-Gene™ 6000 instrument, using a fast, 2-step cycling protocol (40 cycles) with 5 sec denaturation (95 °C) and 20 sec annealing/extension (60 °C). The ABI MeltDoctor HRM Master Mix was used according to the manufacturer's instructions, with the same template DNA samples. ABI MeltDoctor™ is unable to differentiate the Type IV SNP, while KAPA HRM FAST detects the SNP in 95% of the samples assayed.

From cell to SNP: Rapid genotyping directly from buccal swabs.



Genotyping of the Type II SNP rs12896399 (G/T), part of the eye color haplotype, with KAPA Express Extract and KAPA HRM FAST. The combination of the KAPA Express Extract DNA Extraction Kit (containing a novel thermostable protease) and the KAPA HRM FAST PCR Kit enables extraction, amplification and HRM in less than 2 hours. DNA extracts were prepared from buccal swabs obtained from 36 individuals using KAPA Express Extract DNA Extraction Kits (according to recommended protocols). DNA extracts (1 μ l of each) were used directly in 20 μ l KAPA HRM FAST reactions containing 1X KAPA HRM FAST Master Mix, 2.5 mM $MgCl_2$ and 0.2 μ M of each primer (targeting a 75 bp amplicon surrounding the SNP of interest). PCR and HRM was performed with the Corbett Rotor-Gene™ 6000 instrument, using a fast, 2-step cycling protocol (45 cycles) with 5 sec denaturation (95 °C) and 30 sec annealing/extension (60 °C).

ORDERING INFORMATION

Description	Code	Kit contents
KAPA HRM FAST PCR Kit	KK4201	100 rxn
KAPA HRM FAST PCR Kit	KK4202	500 rxn
KAPA HRM FAST PCR Kit	KK4203	1000 rxn



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