Evolved to solve
KAPA2G Robust

KAPA2G Robust DNA Polymerase is a second-generation (2G) enzyme evolved to solve inconsistent amplification across a broad range of amplicon types (GC- and AT-rich). This product enables higher processivity and specific activity, which translates to robust PCR performance, high sensitivity, and improved tolerance to common inhibitors. The high performance is ideally suited for challenging PCR applications and difficult samples, eliminating the need for optimization using multiple enzymes and protocols[1].

Gains from KAPA2G Robust:

- **Easily work with crude samples**
  KAPA2G Robust shows high tolerance to inhibitor carryover and crude sample PCR (e.g. FFPE)
- **Achieve high sensitivity in challenging applications**
  Obtain high yields per unit enzyme
- **Improve your PCR workflow for difficult samples**
  Work with GC- and AT-rich targets and shorten optimization time of your assays

Improved tolerance to common PCR inhibitors

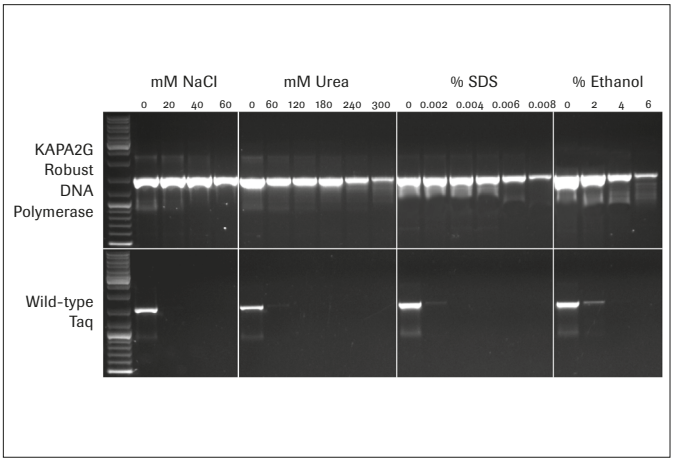

Figure 1: Amplification of a 1.5 kb fragment from 1 pg plasmid DNA in the presence of four common PCR inhibitors using the KAPA2G Robust HotStart PCR kit and wild-type hot start Taq polymerase. All reactions contained 0.5 units of enzyme per 25 µL reaction. KAPA2G Robust HotStart Buffer B was used throughout, with the addition of KAPA Enhancer 1 for reactions containing SDS. Cycling was performed with an Eppendorf Mastercycler epgradient S, using a standard 3-step cycling profile (35 cycles) with an annealing temperature of 64°C and 1.5 min extension time per cycle for all enzymes[1].

[1] Reference: data on file at Roche.

For further processing only.

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Increased performance across a wide range of GC- and AT-rich targets

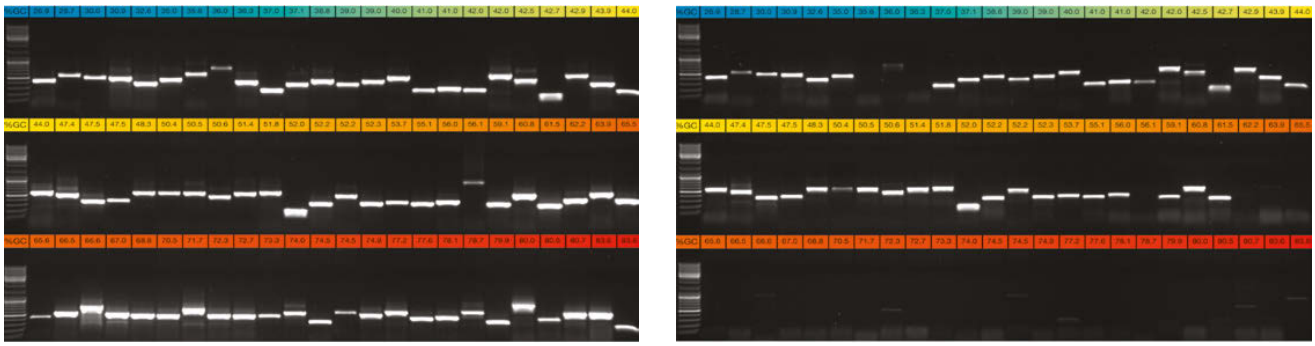

Figure 2: Half of each of the PCR products obtained with 72 of the 96 primer sets used in this study were electrophoresed in a 1 % TBE-agarose gel. Amplicons were loaded in order of increasing GC content, with the lowest GC content (27%, blue) at the top left hand side and the highest GC content (84%, red) at the bottom right hand side of each composite gel image. Primers selected for this study had variable primer lengths, sequence composition, theoretical melting temperatures and other design features. Some primers contained 5'-tails for post-PCR sequencing using M13 or other standard sequencing primers. **A.** KAPA2G Robust HotStart ReadyMix reactions (25 µL) were performed as outlined in the User Guide. **B.** Wild-type Taq reactions (25 µL, containing 0.5 U Taq per reaction) were performed in Taq reaction buffer (1.5 mM MgCl2 at 1X), using the same final primer and dNTP concentrations as for KAPA2G Robust. All reactions contained 25 ng human genomic DNA. 5% DMSO was included in all reactions (KAPA2G Robust and Taq) targeting amplicons with a GC content >70%[1].

Ordering information

Product	Pack size	Catalog number
KAPA2G Robust HotStart PCR Kit	5 kU	08 041 121 001
KAPA2G Robust HotStart ReadyMix	12.5 ml	08 041 113 001

Related products	Pack size	Catalog number
KAPA Express Extract	1,000 reactions	08 041 253 001

[1] **Reference**
Data on file at Roche.

Regulatory disclaimer
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Published by
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