

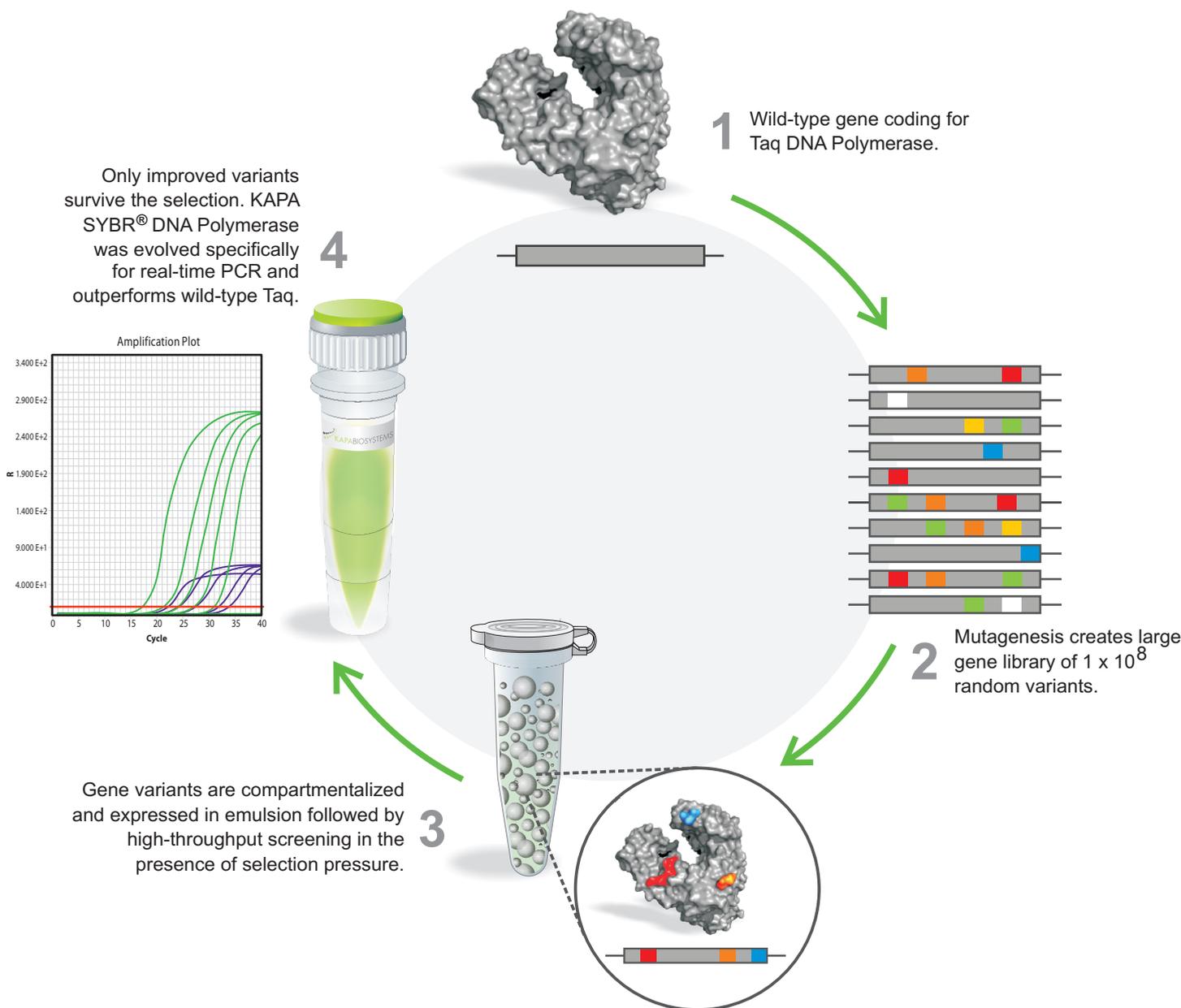
# >> Our technology

**Wild-type enzymes are transformed into engineered enzymes through a process of high-throughput molecular evolution.**

The cumulative effects of small changes to protein structure significantly limit the rational design of enzyme function. A preferred strategy for protein engineering involves simulating evolution in the laboratory. Large libraries of protein variants are screened through a specific functional selection pressure, only the enzymes with improved function survive for the next round of selection. Recent innovations in mutagenesis, *in vitro* genotype-phenotype linkage, and massively parallel screening assays have finally unlocked the potential of molecular evolution.

Kapa Biosystems is the only reagents supplier that offers a range of novel polymerases evolved specifically for applications such as real-time PCR/qPCR, high fidelity PCR, fast PCR, robust PCR, crude sample PCR, long range PCR, next-generation DNA sequencing, and molecular diagnostics.

## High-throughput molecular evolution.



# >> Next-Generation PCR

Kapa Biosystems' molecular evolution platform is capable of engineering novel DNA polymerases that are fundamentally different at the protein level than wild-type Taq; our engineered DNA polymerases contain unique amino acid modifications that confer dramatic improvements to the performance of the enzyme.



## KAPA2G™ Robust HotStart

**Improve PCR success rates with this highly versatile second-generation polymerase.**

KAPA2G Robust DNA Polymerase offers higher processivity and specific activity, which translates to robust performance across a wide range of GC- and AT-rich templates and amplicons, difficult samples, as well as improved tolerance to many common PCR inhibitors such as ethanol, salt, and SDS. KAPA2G Robust HotStart is the enzyme of choice for crude samples, including colony PCR.

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## KAPA SYBR® FAST qPCR Kits

**The first DNA polymerase engineered for real-time PCR.**

KAPA SYBR® FAST DNA Polymerase has been evolved to perform optimally in stringent qPCR reaction conditions, exhibiting significant improvements in signal-to-noise ratio, cycle threshold (Ct), linearity, speed, and sensitivity. Kits are available for all qPCR instruments, including the Roche LightCycler® 480.

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## KAPA PROBE FAST qPCR Kits

**Precise, reproducible, and versatile kit for all probe-based qPCR applications.**

Kits contain a ready-to-use master mix for highly sensitive and accurate real-time PCR using sequence-specific probe chemistries including TaqMan, FRET probes, and molecular beacons. Optimized for versatility and speed – KAPA PROBE FAST qPCR Kits provide fast and reproducible results for genotyping, gene expression analysis, and multiplexing.

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## KAPA HiFi™ HotStart

**World's highest fidelity polymerase for PCR - 100x increase in fidelity over Taq.**

KAPA HiFi HotStart is a novel, single-enzyme system that exhibits industry-leading performance when compared with other high fidelity polymerases and polymerase blends. The intrinsic high processivity of KAPA HiFi HotStart results in significant improvements in yield, sensitivity, speed, target length, and the ability to amplify difficult templates.

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## KAPA2G™ Fast HotStart

**The ultimate hot start enzyme for extreme speed and performance.**

Evolved specifically for speed and high performance, KAPA2G Fast HotStart offers Fast PCR based on the intrinsic ability of the KAPA2G Fast DNA polymerase to synthesize DNA at a much faster rate than wild-type polymerases. 1 second per kilobase extension rate allows for increased productivity and faster time to results without sacrificing performance.

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## KAPA Long Range HotStart

**Engineered for long templates and extreme sensitivity.**

The KAPA Long Range system is engineered for the amplification of long and complex targets up to 20 kb. The system is optimized specifically for high yields and extreme sensitivity. KAPA Long Range also exhibits a 4x improvement in fidelity as compared to standard Taq DNA polymerase.

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## KAPA Blood PCR Mix

**Eliminate DNA extraction with the first polymerase engineered for PCR direct from blood.**

The enzyme is supplied in an easy-to-use ReadyMix format containing all PCR components except primers and template. KAPA Blood PCR Mix is ideal for end-point PCR using one or more primer sets, end-point PCR followed by direct restriction enzyme digestion specific for SNPs, and paternity testing using the Promega PowerPlex® 16 System.

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For more information please contact [sales@kapabiosystems.com](mailto:sales@kapabiosystems.com) or your local representative.