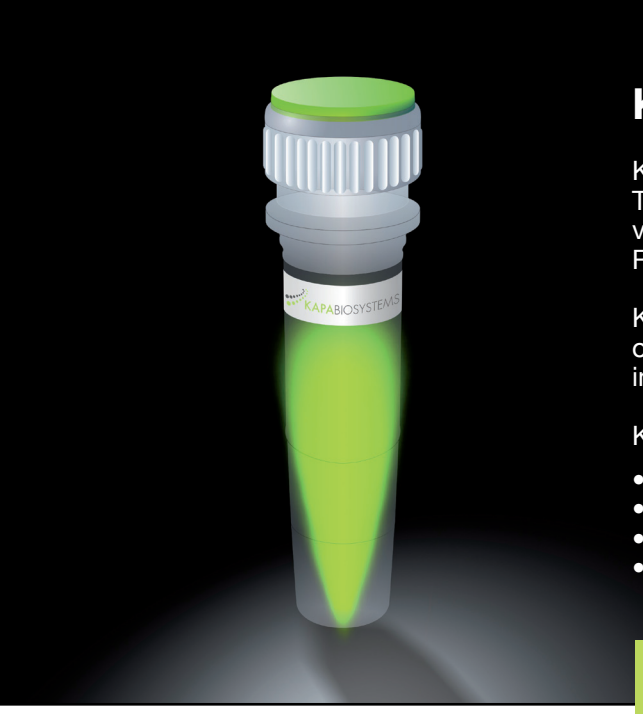



# KAPA SYBR® FAST One-Step qRT-PCR Kits

KAPA SYBR® FAST One-Step qRT-PCR Kits contain M-MuLV Reverse Transcriptase, RNase Inhibitor and a novel DNA Polymerase engineered via molecular evolution. The kit is optimized for rapid one-step, one-tube RNA quantification.

KAPA SYBR® FAST One-Step qRT-PCR Kits are designed to perform optimally in stringent qRT-PCR reaction conditions, exhibiting dramatic improvements in sensitivity, specificity, reaction efficiency, and fluorescence.

Kits are ideally suited for:

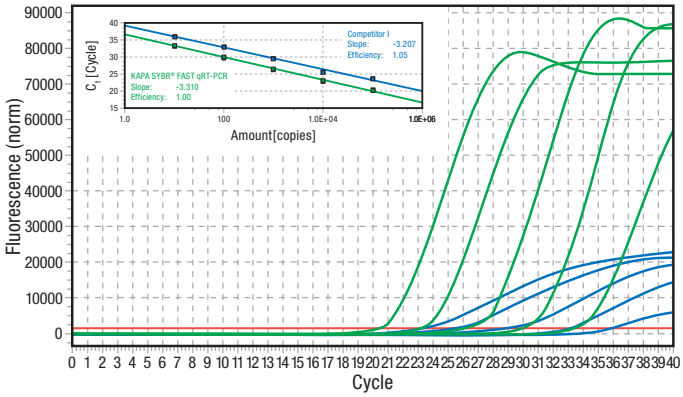
- Gene expression analysis
- Microarray validation
- Gene knockdown validation
- RNAi and miRNA research

**Reduce experimental variation and contamination with a convenient one-step qRT-PCR protocol.**

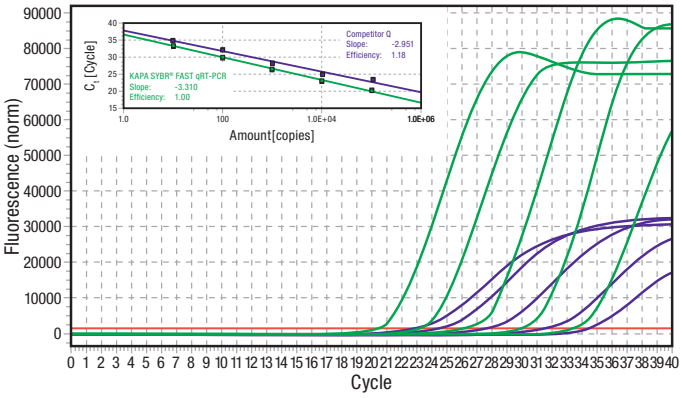
## Superior signal and reaction efficiency

The improved speed, processivity and robustness of KAPA SYBR® FAST One-Step qRT-PCR kits results in consistently high amplification efficiencies required for accurate relative quantification. To demonstrate the high performance of KAPA SYBR® FAST One-Step qRT-PCR Kit for gene expression analysis, the kit was compared to leading competitor kits across a wide range of input RNA concentrations. The KAPA SYBR® FAST One-Step qRT-PCR Kit achieved higher fluorescence, earlier Ct values and improved amplification efficiency when compared to competitor one-step qRT-PCR kits.

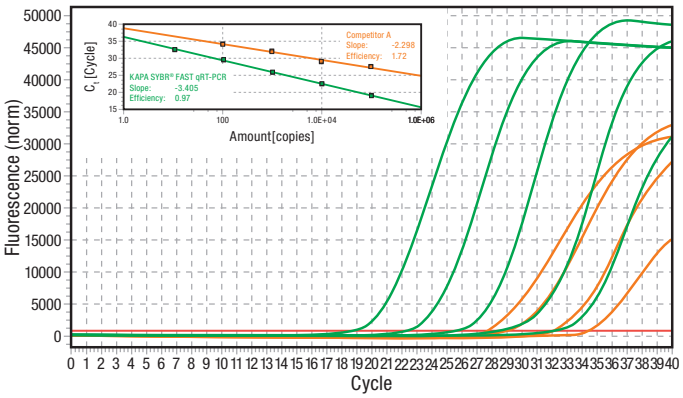
**Competitor I (105% efficiency)**




**Competitor Q (118% efficiency)**



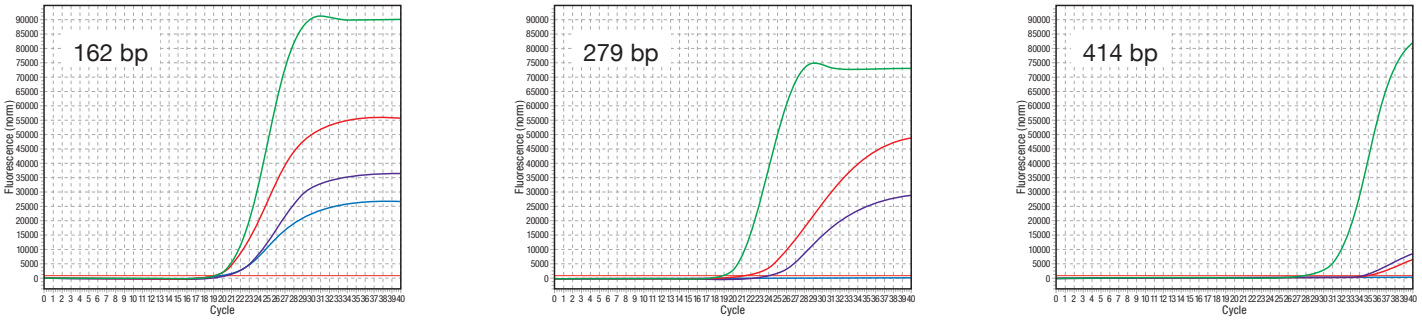

**Competitor A (172% efficiency)**




Higher fluorescence, earlier Ct values and improved reaction efficiency. The RRMI gene (94 bp, 45.7% GC) was amplified from log-fold serial dilutions of RNA (100 ng- 10 pg/20 µl reaction), isolated from human placenta, using the KAPA SYBR® FAST One-Step qRT-PCR Kit (green) or Competitor I (blue), Competitor Q (purple), and Competitor A (orange). Linear amplification plots demonstrate earlier Ct values and greater baseline subtracted fluorescence for the RRMI gene with the KAPA SYBR® FAST One-Step qRT-PCR Kit. Calculated reaction efficiencies confirmed consistently high performance is achievable with the KAPA SYBR® FAST One-Step qRT-PCR Kit (RRMI = 100% and 97%). Efficiencies obtained with Competitor I (105%), Competitor Q (118%) and Competitor A (176%) were sub-optimal. Reactions were performed using the competitors recommend protocols on the Eppendorf® MasterCycler™ ep *realplex*$^4$ S real-time PCR cycler.

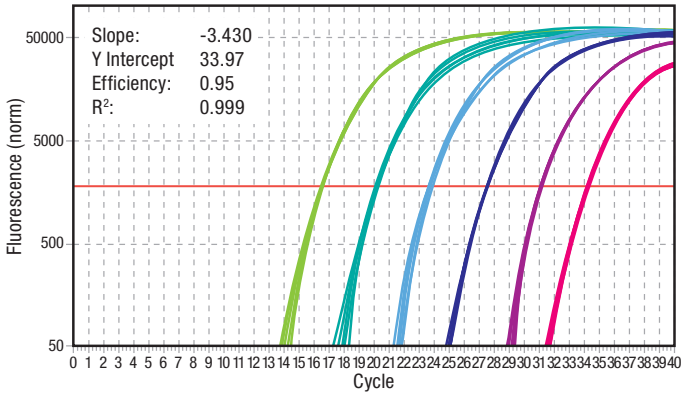
# KAPA SYBR® FAST One-Step qRT-PCR Kits

## Robust amplification across a broad range of target lengths




To demonstrate the robust performance of the KAPA SYBR® FAST One-Step qRT-PCR Kit, MS2 bacteriophage RNA targets of increasing length were amplified at a concentration of 0.8 pg/20 µl using the KAPA SYBR® FAST One-Step qRT-PCR Kit (green) or Competitor T (red), Competitor I (blue), and Competitor Q (purple). Increased amplicon length led to a significant decrease in competitor performance as indicated by delayed Ct values or complete reaction failure. cDNA synthesis and qPCR amplification were performed using the competitors recommend protocols on the Eppendorf® MasterCycler™ ep *realplex*$^4$ S real-time PCR cycler.

## High reproducibility and sensitivity across a broad range of concentrations




The high reproducibility and sensitivity of the KAPA SYBR® FAST One-Step qRT-PCR Kit enable accurate interrogation of a broad range of RNA template concentrations. A 279 bp fragment was amplified in replicates of six from log-fold serial dilutions of commercial MS2 bacteriophage RNA (80 pg - 0.8 fg/20 µl). cDNA synthesis was performed at 42 °C for 5 min followed by 95 °C for 5 min and 40 cycles of 3 sec denaturation at 95 °C and 30 sec combined annealing/extension at 60 °C. The calculated reaction efficiency of 95% was obtained using all six replicates per data point. Reactions were performed using the competitors recommend protocols on the Eppendorf® MasterCycler™ ep *realplex*$^4$ S real-time PCR cycler.


KAPABIOSYSTEMS

### ORDERING INFORMATION

| Description | Code | Kit contents |
|---|---|---|
| KAPA SYBR® FAST One-Step Universal | KK4650 | 1 x 1 ml |
| KAPA SYBR® FAST One-Step Universal | KK4651 | 1 x 5 ml |
| KAPA SYBR® FAST One-Step Universal | KK4652 | 2 x 5 ml |
| KAPA SYBR® FAST One-Step ABI Prism® | KK4660 | 1 x 1 ml |
| KAPA SYBR® FAST One-Step ABI Prism® | KK4661 | 1 x 5 ml |
| KAPA SYBR® FAST One-Step ABI Prism® | KK4662 | 2 x 5 ml |
| KAPA SYBR® FAST One-Step Bio-Rad iCycler™ | KK4670 | 1 x 1 ml |
| KAPA SYBR® FAST One-Step Bio-Rad iCycler™ | KK4671 | 1 x 5 ml |
| KAPA SYBR® FAST One-Step Bio-Rad iCycler™ | KK4672 | 2 x 5 ml |
| KAPA SYBR® FAST One-Step for Roche LC 480 | KK4680 | 1 x 1 ml |
| KAPA SYBR® FAST One-Step for Roche LC 480 | KK4681 | 1 x 5 ml |
| KAPA SYBR® FAST One-Step for Roche LC 480 | KK4682 | 2 x 5 ml |

For more information please contact **sales@kapabiosystems.com** or your local representative.



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