

QuantiNova® — proven compatibility with various real-time cyclers in gene expression analysis

QuantiNova SYBR® Green and QuantiNova Probe PCR Kits were used on various real-time cyclers, and compared with other kit chemistries — showing superior performance. The kits can be used on existing laboratory equipment without compromising results or interfering with established workflow in routine procedures.

Introduction

Flexibility and compatibility in molecular biology processes, such as gene expression analysis, are increasingly important, not only for validation of data, but also for laboratory equipment and procedures. To facilitate laboratory routine efficiency and lean processes, QIAGEN applies its generic reagents flexibly on existing equipment. This streamlines the workflow by reducing complexity and costs, and minimizing human error.

Pipetting control prevents errors

QuantiNova real-time PCR kits provide a visual in-process pipetting control to ensure correct dispensation of reagents and samples during qPCR setup, which is especially useful for high throughput. This easy measure reduces hands-on time and potentially false results caused by incorrect pipetting (Figure 1).



Figure 1. Visual pipetting control.

This visual indicator can be incorporated into any established workflow, without changing processes or purchasing new equipment. Furthermore, with QuantiNova SYBR Green and Probe PCR Kits, reactions can be set up at room temperature, further streamlining the workflow.

Compatibility of QuantiNova Kits with different real-time cyclers

To assess the compatibility of QuantiNova SYBR Green and Probe PCR Kits with different equipment, various commonly used real-time cyclers were tested in gene expression experiments. Fast-cycling or the incorporation of ROX™ as a reference dye were used, based on the manufacturers' recommendations. The expression of EGFR in HeLa cells was analyzed. RNA was reverse transcribed using the QuantiTect® Reverse Transcription Kit. Reactions were run in triplicate using 10-fold dilutions of the cDNA (10–0.01 ng) on various cyclers, fully exploiting the fast-cycling capabilities of each cycler (Figures 2 and 3).

The QuantiNova SYBR Green PCR Kit and The QuantiNova Probe PCR Kit provided consistent sensitivity, reproducibility, and efficiency on all tested cyclers, despite the variation in formats, cycling conditions, and requirement for a passive dye.

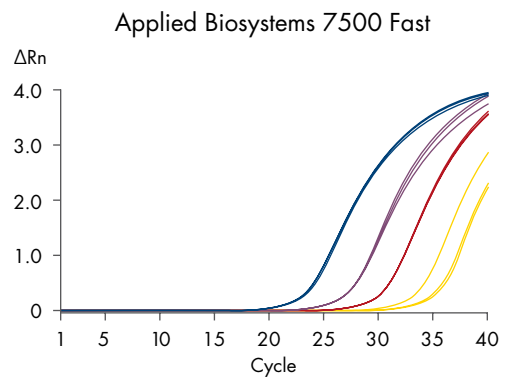
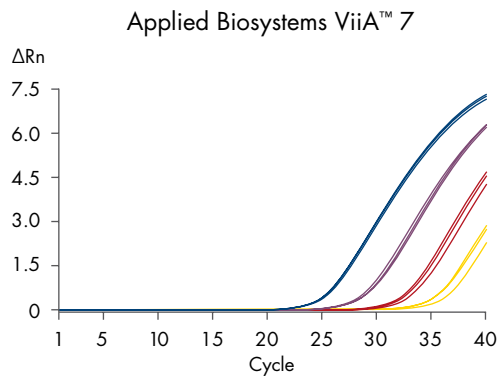
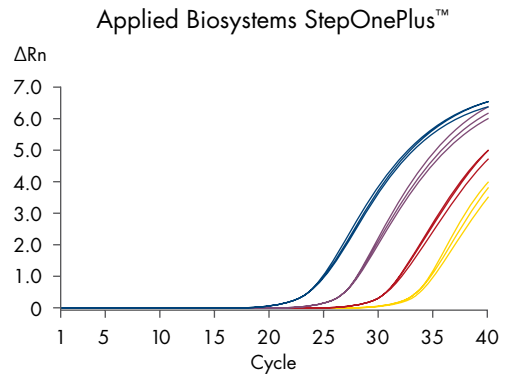
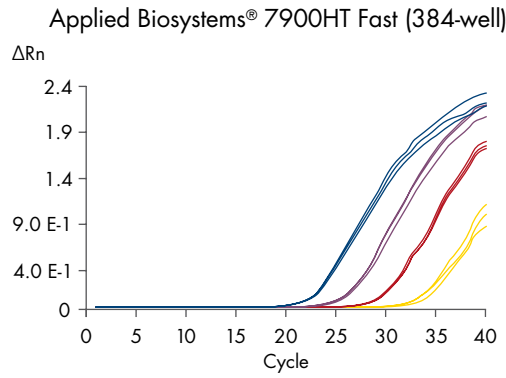
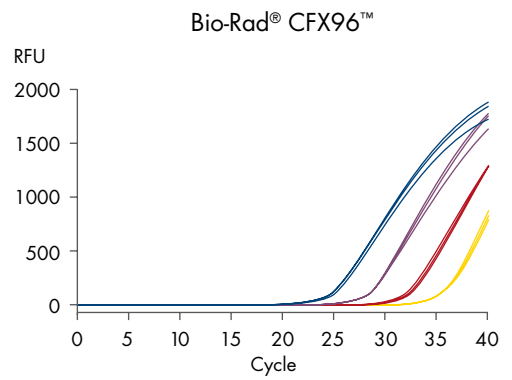
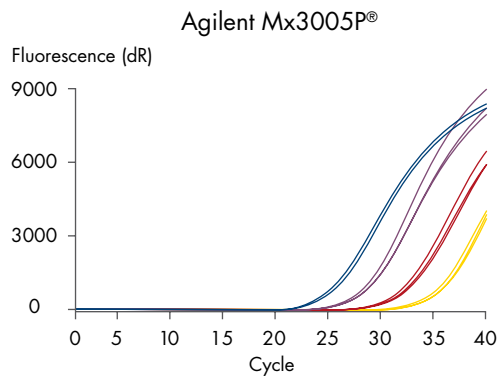
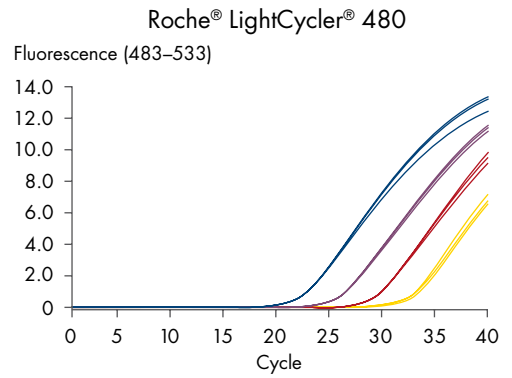
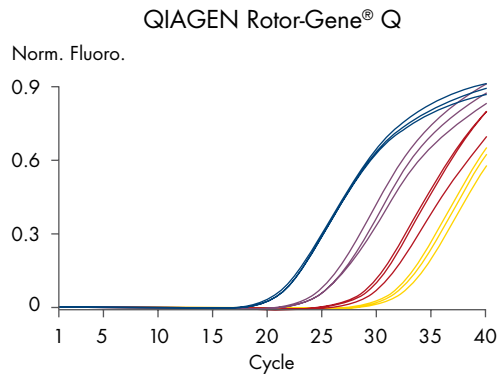


Figure 2. Robust, sensitive results on a range of real-time PCR cyclers with the QuantiNova SYBR Green PCR Kit.

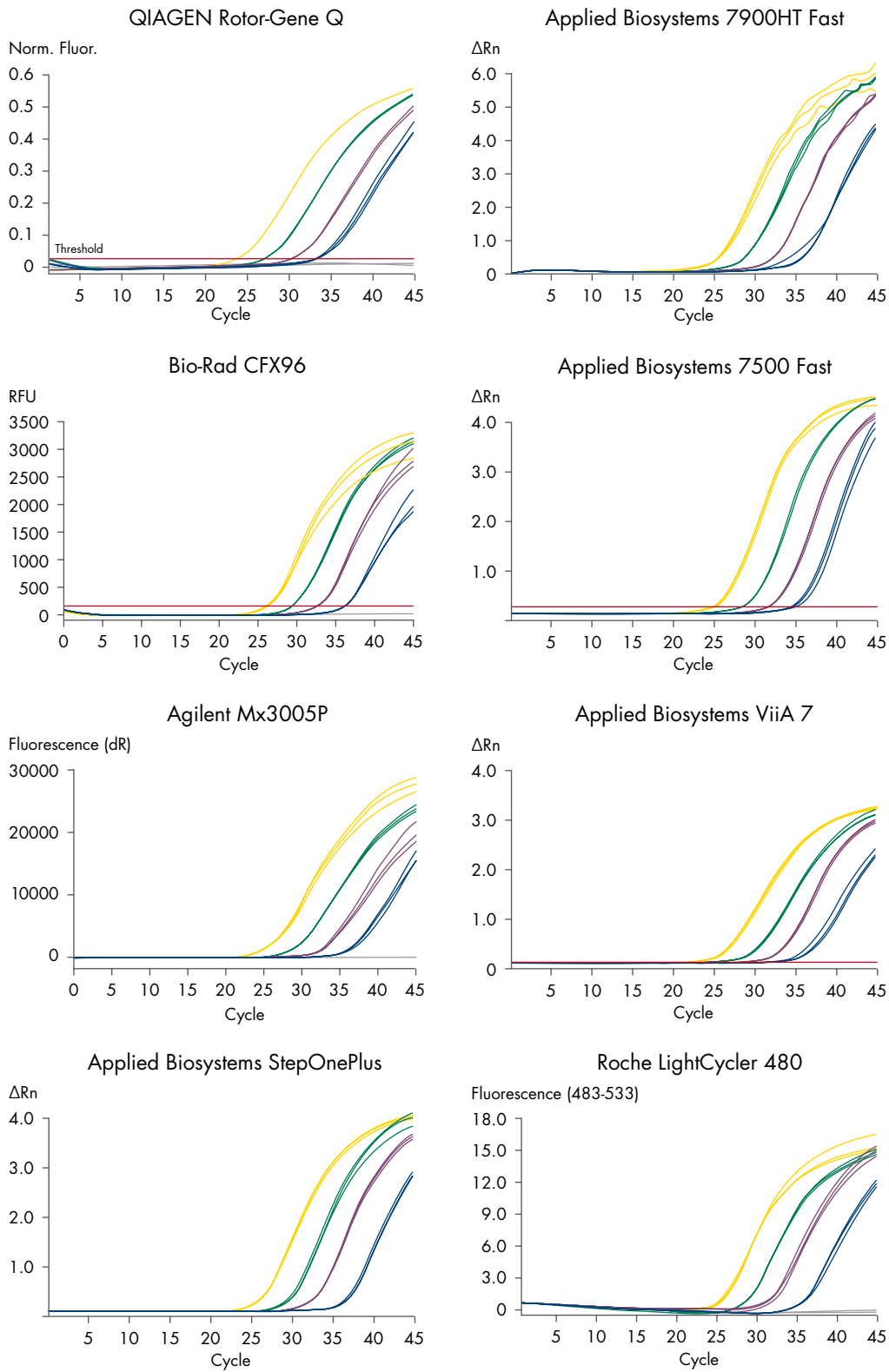


Figure 3. Robust, sensitive results on a range of real-time PCR cyclers with the QuantiNova Probe PCR Kit.

No compromise in results with QuantiNova

In addition to compatibility with existing equipment, it is important for a laboratory to ensure consistency or even improve on results when changing chemistry or kits. QuantiNova SYBR Green and Probe PCR Kits were compared with a combination of commonly used kits and instruments from the same supplier (Figures 4 and 5). QuantiNova SYBR Green and Probe PCR Kits demonstrated significantly lower C_T values, higher reproducibility, and higher reaction efficiency, compared with PCR kits from other suppliers.

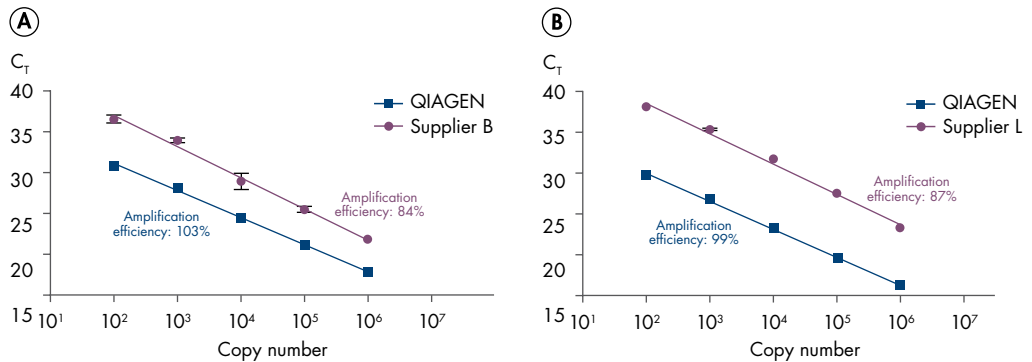


Figure 4. Superior results compared with equivalent probe kits. The performance of the QuantiNova Probe PCR Kit was compared to a probe PCR kit from supplier B on a Bio-Rad CFX Connect™ cyclor **A** and a probe PCR kit from supplier L **B** on an Applied Biosystems ViiA7 cyclor. Reactions were run in triplicate using 10-fold dilutions of plasmid DNA (10^6 – 10^2 copies per reaction) and a TaqMan® assay detecting a 500 bp amplicon using a minor-groove binding probe. The QuantiNova Probe PCR Kit provides significantly lower C_T values, higher reproducibility, and higher reaction efficiency compared to the probe PCR kits from suppliers B and L.

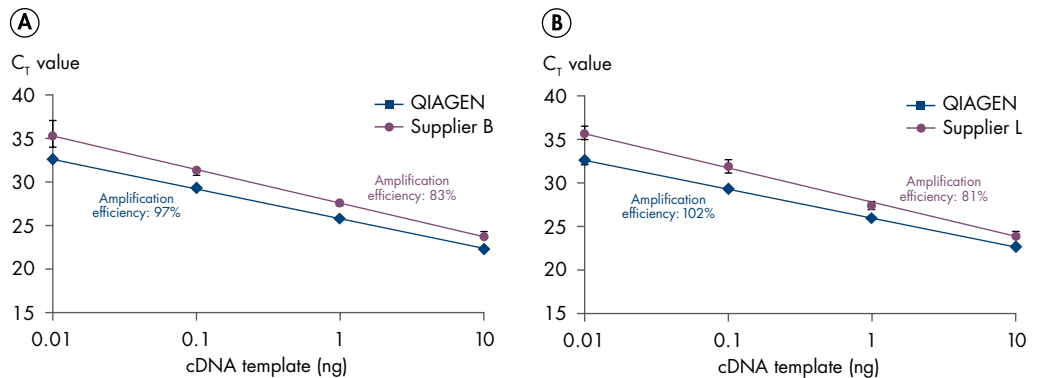


Figure 5. Superior results compared with equivalent SYBR Green PCR kits. The performance of the QuantiNova SYBR Green PCR Kit was compared to **A** a SYBR Green PCR kit from supplier B on a Bio-Rad CFX96 cyclor and **B** a SYBR Green PCR kit from supplier L on the ViiA 7 cyclor. The QuantiNova SYBR Green PCR Kit provides significantly lower C_T values, higher reproducibility, and higher reaction efficiency.

Conclusions

It has been shown that QuantiNova SYBR Green and Probe PCR Kits are fully compatible with commonly used real-time cyclers and that experimental results are not compromised when switching to QuantiNova SYBR Green or Probe PCR Kits.

The benefits of QuantiNova real-time PCR kits can be realized without putting established procedures at risk and without requiring additional equipment. The benefits include:

- Visual pipetting control for increased process safety
- Room temperature stability during setup for improved workflow flexibility
- Superior specificity and sensitivity compared with other suppliers
- Ultrafast cycling capability for efficient use of labor time and equipment

Ordering Information

Product	Contents	Cat. no.
QuantiNova SYBR Green PCR Kit (100)	For 100 x 20 µl reactions: 1 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 µl QuantiNova Yellow Template Dilution Buffer, 250 µl QN ROX Reference Dye, 1.9 ml Water	208052
QuantiNova SYBR Green PCR Kit (500)	For 500 x 20 µl reactions: 3 x 1.7 ml 2x QuantiNova SYBR Green PCR Master Mix, 500 µl QuantiNova Yellow Template Dilution Buffer, 1 ml QN ROX Reference Dye, 1.9 ml Water	208054
QuantiNova SYBR Green PCR Kit (2500)	For 2500 x 20 µl reactions: 15 x 1.7 ml 2x QuantiNova SYBR Green PCR Master Mix, 5 x 500 µl QuantiNova Yellow Template Dilution Buffer, 5 x 1 ml QN ROX Reference Dye, 5 x 1.9 ml Water	208056
QuantiNova Probe PCR Kit (100)	For 100 x 20 µl reactions: 1 ml 2x QuantiNova Probe PCR Master Mix, 250 µl QN ROX Reference Dye, 500 µl QuantiNova Yellow Template Dilution Buffer, 1.9 ml Water	208252
QuantiNova Probe PCR Kit (500)	For 500 x 20 µl reactions: 3 x 1.7 ml 2x QuantiNova Probe PCR Master Mix, 1 ml QN ROX Reference Dye, 500 µl QuantiNova Yellow Template Dilution Buffer, 1.9 ml Water	208254
QuantiNova Probe PCR Kit (2500)	For 2500 x 20 µl reactions: 15 x 1.7 ml 2x QuantiNova Probe PCR Master Mix, 5 x 1 ml QN ROX Reference Dye, 5 x 500 µl QuantiNova Yellow Template Dilution Buffer, 5 x 1.9 ml Water	208256

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

To explore the range of QuantiNova real-time PCR kits visit www.qiagen.com/QuantiNova.

Trademarks: QIAGEN®, Sample to Insight®, QuantiNova®, QuantiTect®, Rotor-Gene® (QIAGEN Group); Bio-Rad®, CFX96™, CFX Connect™ (Bio-Rad Laboratories, Inc.) Roche®, LightCycler®, TaqMan® (Roche Group); Mx3005p® (Agilent Technologies); Applied Biosystems®, ROX™, StepOnePlus™, SYBR®, ViiA™ (Thermo Fisher Scientific Inc.). Registered names, trademarks, etc. used in this document, even when not specifically marked as such, are not to be considered unprotected by law.

© 2015 QIAGEN, all rights reserved. PROM-7813-002

Ordering www.qiagen.com/contact | Technical Support support.qiagen.com | Website www.qiagen.com