Improved Real-Time Quantitative PCR (qPCR) on the BioRad CFX96 Real-Time PCR platform

Data Sheet

For faster, improved real-time quantitative PCR (qPCR) results choose Agilent

- Novel fast *Taq* mutant for qPCR results in under 40 minutes
- Enhanced rapid hot start capability saves time and reduces primer-dimer formation
- Optimized fast cycling formulation ensures reliable and reproducible data with shorter run times
- Convenient pre-blended formulations compatible with any fluorescent detection chemistry including both sequence-specific probes and SYBR® Green dyes

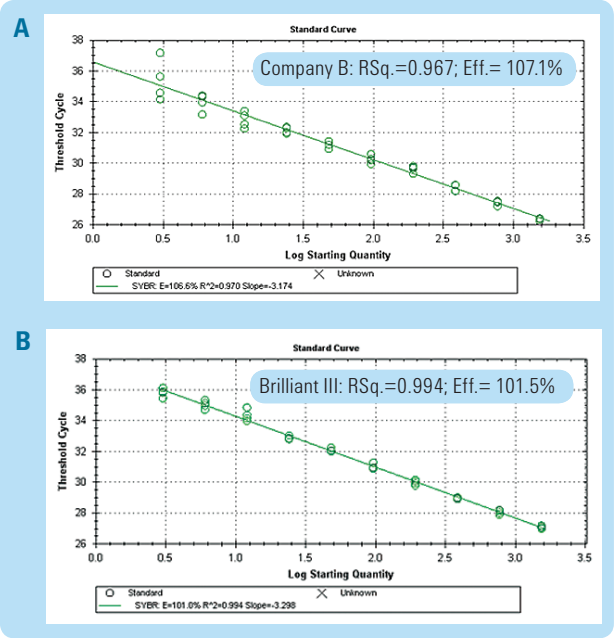


Figure 1
Excellent Sensitivity at Low Target Concentrations
The novel formulation of the Brilliant III Ultra-Fast QPCR Master Mix offers superior sensitivity down to low template concentrations. Standard curves showing detection of a 2-fold serial dilution from 1536 copies to 3 copies of plasmid DNA using (A) Company B master mix and (B) Brilliant III Ultra-Fast QPCR Master Mix. The replicate reproducibility of Company B master mix begins to fail between 12 and 24 copy equivalents indicating lower sensitivity of the detection at lower target concentrations. Brilliant III Ultra-Fast QPCR Master Mix shows tighter replicates at the lower concentrations demonstrating the improved sensitivity down to 3 copy equivalents.

Brilliant III Ultra-Fast QPCR Master Mixes help you achieve success in all your qPCR applications. These unique reagents are equally robust and reproducible across a variety of assays on the BioRad CFX96 Real-Time instrument and are compatible with any fluorescent detection chemistry including both sequence-specific probes and SYBR® Green dyes.

Brilliant III Ultra-Fast QPCR Master Mixes employ a mutant *Taq* derived fast DNA polymerase and a specially modified hotstart to ensure gene specific amplification with minimal primer dimer formation. The novel hot start technology improves the specificity and precision of detection over a wide range of target concentrations. These reagents deliver high quality performance, especially with difficult to amplify targets or low abundant genes, resulting in a greater dynamic range and improved sensitivity. With the Brilliant III Ultra-Fast QPCR Master Mixes, researchers can benefit from the time saving and increased sample throughput without compromising the quality of their qPCR results.

Highly efficient one-step QRT-PCR is performed with our Brilliant III Ultra-Fast QRT-PCR reagents using a Moloney-based RT for 1st strand synthesis with optimal performance at a synthesis temperature of 50°C.

AffinityScript QPCR cDNA Synthesis Kit can be used for 1st strand cDNA synthesis in a 2-step providing flexibility across a wide range of temperatures. Novel hotstart *Taq* DNA polymerase combined with AffinityScript RT, minimizes the potential for primer-dimer formation or other non-specific PCR products and delivers the most reproducible results.

The new Brilliant III Ultra-Fast QPCR Master Mixes can deliver QPCR results in less than 40 minutes on fast cycling real-time PCR systems. The enhanced sensitivity, specificity and reproducibility within an assay and across multiple assays from high to very low copy number templates makes Brilliant III Ultra-Fast QPCR and QRT-PCR Master Mixes the ideal choice for real-time PCR analysis.

For the best sensitivity and performance on any fast or standard cycling real-time PCR platform, choose our next generation Brilliant III Ultra-Fast QPCR or QRT-PCR reagents.

Agilent Technologies

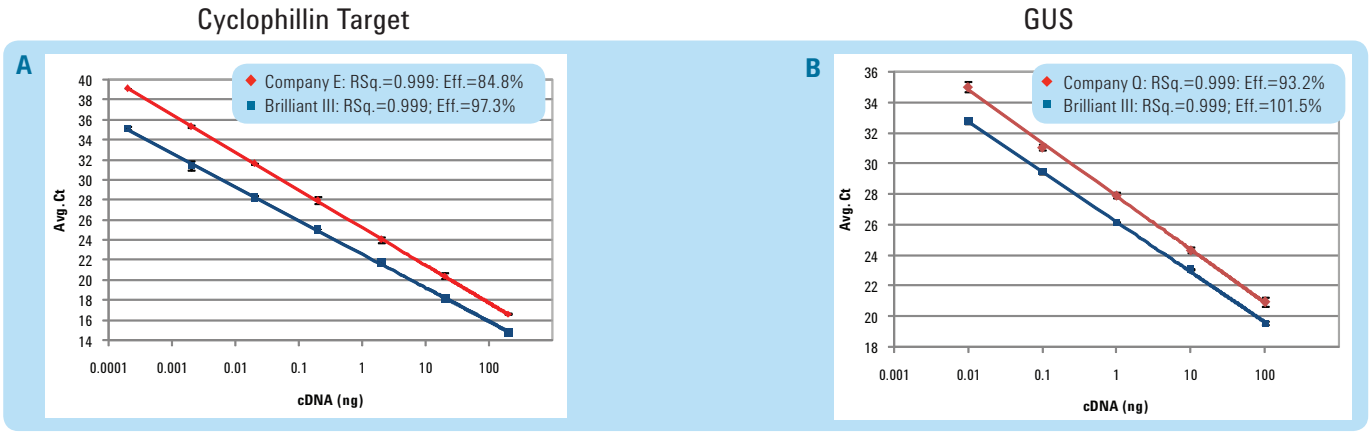
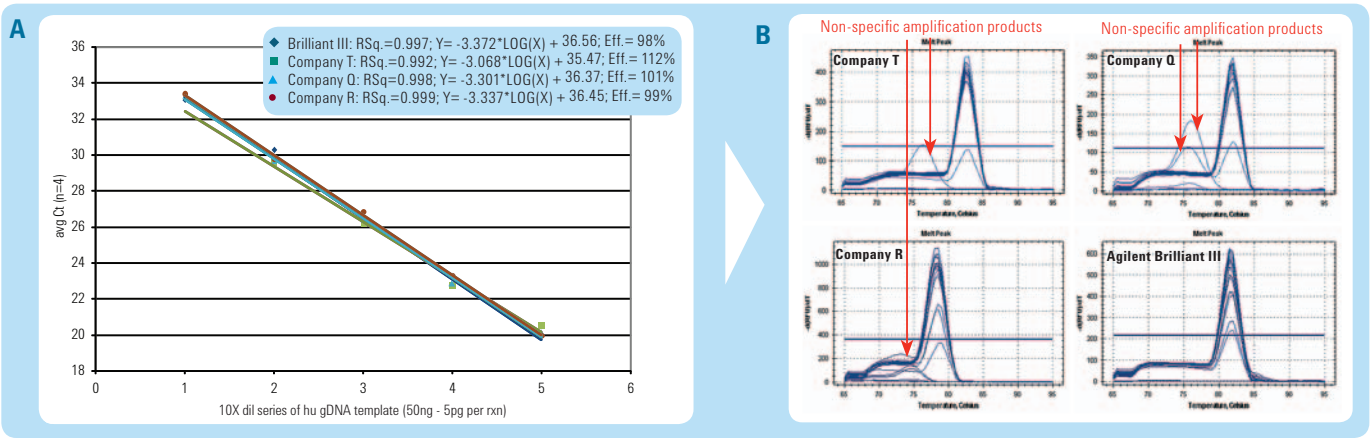


Figure 2A and 2B
Minimizing Primer Dimerization Delivers Superior Sensitivity Over a Wide Range of Concentrations
Standard curve 10-fold dilutions detecting Cyclophillin and GUS Assays-On-Demand targets from 7-fold (A) and 5-fold (B) dilution series of 200 ng to 0.2 pg and 100 ng to 10 pg of cDNA respectively. The Brilliant III Ultra-Fast Master Mix detects the target concentrations ~4 Cts and ~2 Cts earlier respectively with better efficiencies and tighter replicates.



Figures 3A & 3B
Minimizing Primer Dimerization Delivers Superior Sensitivity
Five-fold standard curve (A) showing a dilution series of 50 ng to 5 pg of human genomic DNA detecting Numb-1. The standard curve depicts similar efficiencies for Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix compared to competitor master mixes. However, the Dissociation Curve (B) shows primer-dimers or secondary non-specific PCR artifacts for all competitor master mixes except Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix. Company T generates earlier Cts, but the efficiency is compromised by formation of these artifacts which can compete with the specific product, The lack of such artifacts from the Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix reactions suggests that the novel hot start technology of the reagents prevents generation of such non-specific secondary products, and thereby provides a greater degree of confidence in your gene expression analyses.

Ordering Information

Description	Qty	Rxn*	Cat Nos.
Brilliant III Ultra-Fast QPCR Master Mix for BioRad CFX96	2 x 2 ml	400	600880
Brilliant III Ultra-Fast QPCR Master Mix for BioRad CFX96 (10 pack)	20 x 2 ml	4000	600881
Brilliant III Ultra-Fast QRT-PCR Master Mix for BioRad CFX96	2 x 2 ml	400	600884
Brilliant III Ultra-Fast QRT-PCR Master Mix for BioRad CFX96 (10 pack)	20 x 2 ml	4000	600885
Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix for BioRad CFX96	2 x 2 ml	400	600882
Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix for BioRad CFX96 (10 pack)	20 x 2 ml	4000	600883
Brilliant III Ultra-Fast SYBR® Green QRT-PCR Master Mix for BioRad CFX96	2 x 2 ml	400	600886
Brilliant III Ultra-Fast SYBR® Green QRT-PCR Master Mix for BioRad CFX96 (10 pack)	20 x 2 ml	4000	600887

*assumes 20 µl reaction volume

Learn more:
www.stratagene.com/brilliant3

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