Brilliant III Ultra-Fast QPCR/QRT-PCR Master Mixes for ABI 7500 Fast Real-Time PCR System

Data Sheet

For faster, improved real-time quantitative PCR (qPCR) on the ABI 7500 Fast Real-Time PCR instrument – choose Agilent

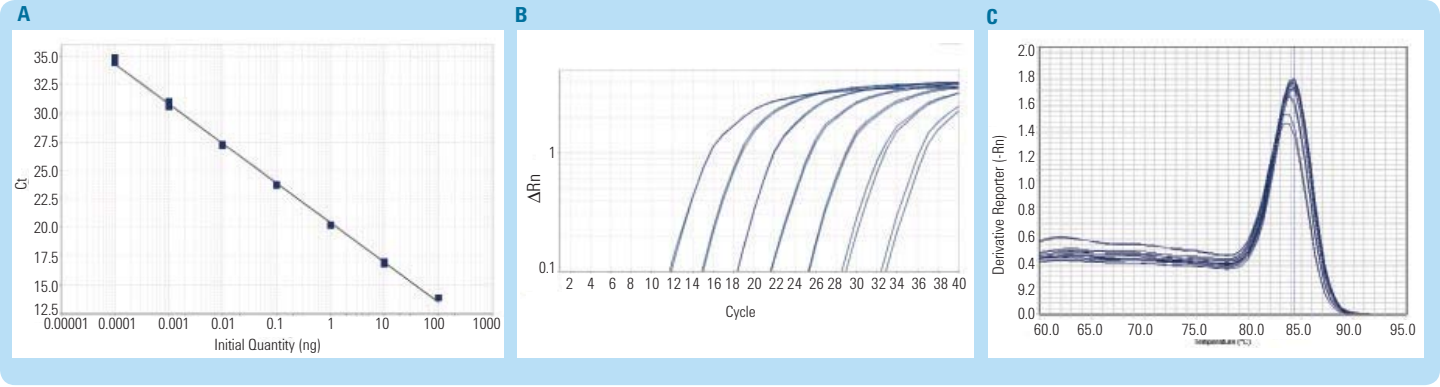
- Novel fast *Taq* mutant for qPCR results in under 30 minutes
- Enhanced rapid hot start capability saves time and reduces primer-dimer formation
- Optimized fast cycling formulation ensures reliable and reproducible data with shorter run times
- Convenient pre-blended formulations compatible with any fluorescent detection chemistry including both sequence-specific probes and SYBR® Green dyes

For reduced time to results cycling on the 7500 Fast Real-Time PCR platform, choose our next generation Brilliant III Ultra-Fast QPCR or QRT-PCR Master Mixes.

The Brilliant III QPCR and QRT-PCR master mixes are designed to provide the fastest cycling times on the ABI 7500 Fast real-time PCR instrument. The new ultra-fast reagents allow the completion of real-time experiments in as little as 29 minutes giving researchers results quicker without compromising data quality. These reagents feature a newly engineered mutant *Taq* delivering faster extension rate combined with an optimized buffer formulation and novel hot-start technology minimizing non-specific amplification products to increase overall sensitivity. Brilliant III Ultra-Fast QPCR and QRT-PCR Master Mixes provide the benefit of ultra-fast cycling times while maintaining the performance of conventional real-time PCR reagents.

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

The AffinityScript QPCR cDNA Synthesis Kit can be used for cDNA synthesis in a 2-step reaction 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.



Figures 1.
Brilliant III Ultra-Fast SYBR® Green QPCR Master Mix Delivers Superior Sensitivity by Minimizing Primer Dimerization.
10 fold dilution series of 100 ng to 0.1 pg of cDNA from human total RNA were used in each 20 µl reaction designed to detect GAPDH (TaqMan Assays-On-Demand) in duplicate. Panel A shows the standard curve over 6 orders of magnitude. The amplification plots are shown in panel B. As seen by the dissociation curve (panel C). Brilliant III Ultra-Fast QPCR Master Mix produced minimal non-specific secondary products, providing a greater degree of confidence in the qPCR data generated. GAPDH efficiency = 94%, R^2 = 0.999. Total run time: 29 min.

Agilent Technologies

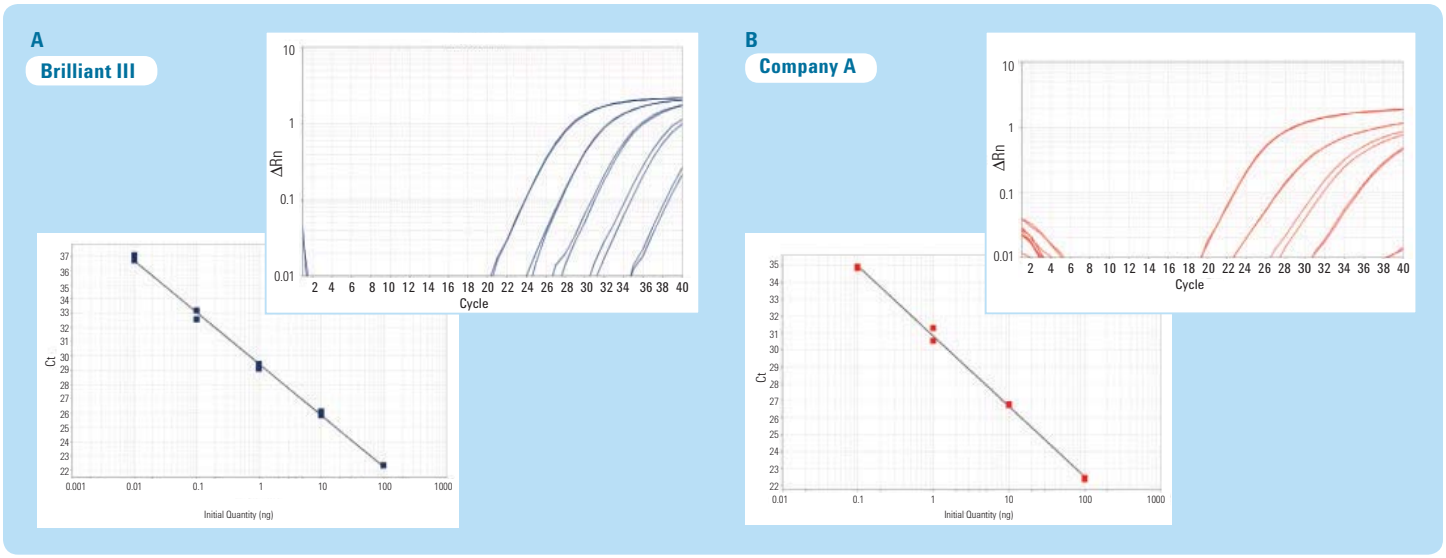


Figure 3A & 3B.
Improved Sensitivity of Detection at Lower Target Concentrations.
Log plots and corresponding standard curve of GUS primer/probe set (ABI Assays-On-Demand) using (A) Brilliant III Ultra-Fast Master Mix and (B) using Company A master mix. Reactions (20 µl) contained 1x primer/probe and human universal cDNA ranging from 100-0.01 ng/Rxn in a 10 fold dilution series (in duplicate). The standard curves span four orders of magnitude resulting in an R^2 of 0.997 and amplification efficiency of 89.5% for the Brilliant III Ultra-Fast Master Mix and three orders of magnitude resulting in an R^2 of 0.998 and amplification efficiency of 73.7% for Company A master mix.

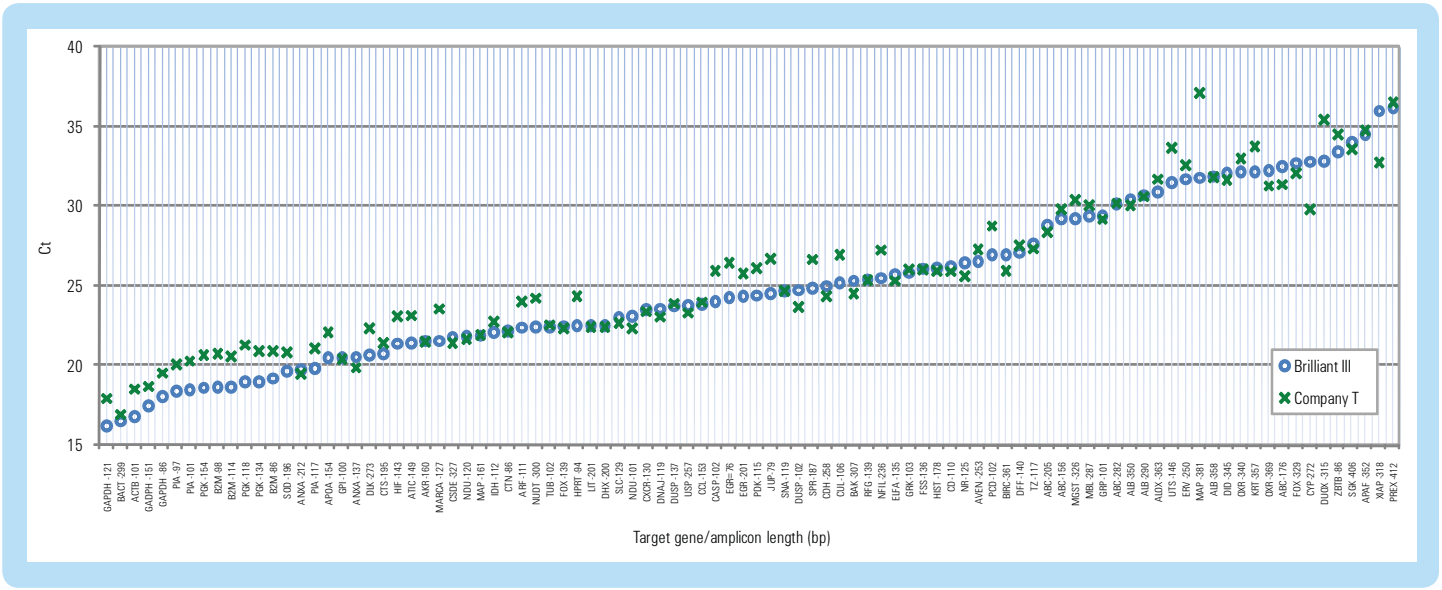


Figure 4.
Reliability Comparison Across 94 cDNA Targets Using Brilliant III Ultra-Fast SYBR® Green qPCR Master Mix and a SYBR® Green Master Mix from Company T.
Master mixes were run under recommended experimental setup and cycling conditions using 1 ng of cDNA from human total RNA in each 20 µl reaction designed to detect the gene target using primers designed for each target. Brilliant III total run time: 29 min. Company T total run time: 34 min. More than 40% of the targets generated >1 Ct delay with the Company T master mix compared to Brilliant III.

Ordering Information

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

*assumes 20 µl reaction volume

Learn more:
www.agilent.com/genomics

U.S. and Canada
1-800-227-9770
agilent_inquiries@agilent.com

Asia Pacific
inquiry_lsca@agilent.com

Europe
info_agilent@agilent.com

Printed in the USA, June 1, 2010
5990-5962EN

Agilent Technologies