

# Brilliant ROX!

Brilliant II QPCR and QRT-PCR Master Mixes with High ROX Concentration Optimized for ABI Real-Time PCR instruments

## Data Sheet

Stratagene Brilliant II QPCR and QRT-PCR master mixes with High ROX have been specifically designed and optimized for use with all ABI real-time PCR systems. In addition, the Brilliant II formulation provides performance benefits for your data:

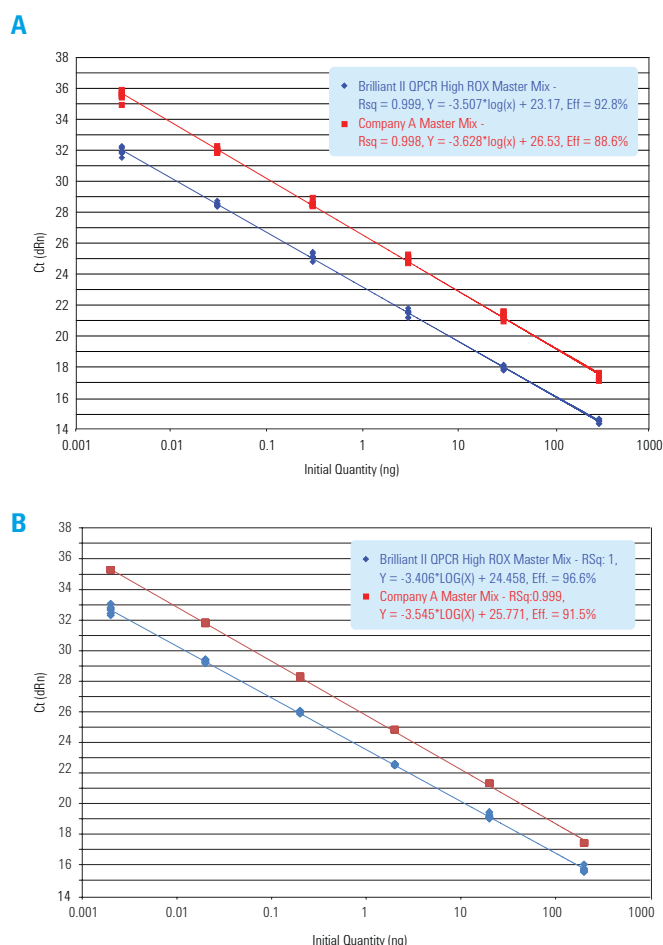
- Improved performance with earlier Ct detection
- Consistent reproducibility across a wide dynamic range
- Increased sensitivity of detection to low copy numbers
- Higher efficiency and specificity
- Flexibility to run on any ABI real-time PCR system

Brilliant II QPCR and QRT-PCR Master Mix kits with high ROX reference dye premixed at optimal concentration for ABI instruments are ready-to-use reaction mixes for high-specificity, real-time amplification of cDNA, genomic DNA or plasmid DNA. This not only eliminates an additional pipetting step, but also ensures the correct amount of ROX in your reaction.

### Improved sensitivity of detection and more robust amplification

The Brilliant II High ROX Master Mix reagents are designed to provide you with improved sensitivity compared with other commercially available QPCR reagents. When compared to other QPCR reagents, we observe earlier threshold cycle (Ct) detection at high and low template concentrations as well as improved reaction efficiency across the entire range of template concentrations. Earlier Ct detection and higher efficiency of amplification ensure greater reproducibility within an assay and across multiple assays and templates.

To demonstrate the improved sensitivity and reproducibility, we compared our Brilliant II QPCR High ROX Master Mix to another commercially available reagent on the ABI PRISM 7900HT and StepOnePlus instruments (Figure 1A & 1B). The improved sensitivity of the Brilliant II reagents compared to competitor A is evident with earlier Ct detection of 1.8-2.8 cycles, tighter replicates at lower concentrations, and better overall reaction efficiency across the entire five orders of magnitude.

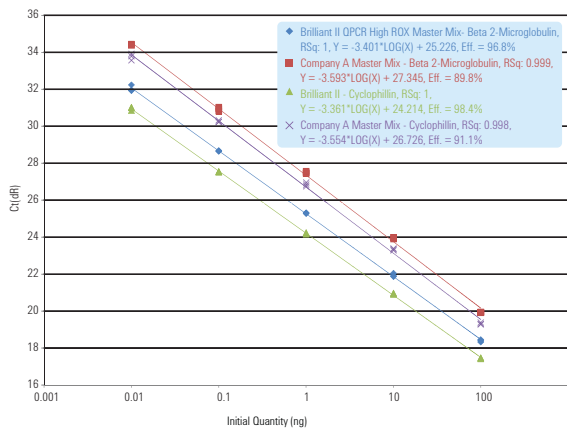


**Figure 1.**  
Brilliant II high ROX Delivers Improved Sensitivity and Reproducibility over a Wide Range of Concentration

Dissociate curve of the resulting PCR products of a dilution series from 200 ng to 0.2 ng of the cyclophilin 'Assay on Demand' gene target from a five 10-fold dilutions comparing Brilliant II high ROX and a commercially available master mix on the (A) ABI PRISM 7900HT and (B) StepOnePlus QPCR systems. Shown are 8 replicates at each concentration.



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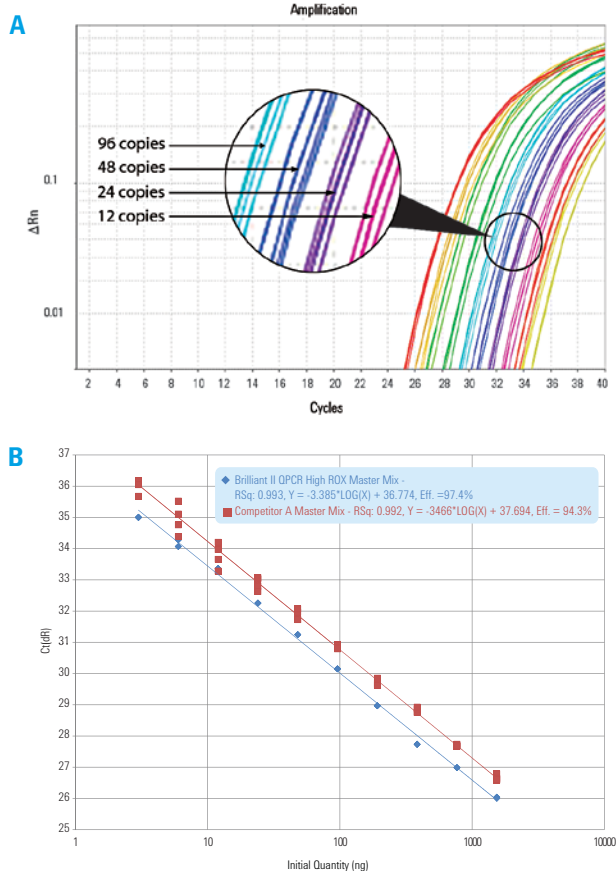


**Figure 2**  
**Improved Reproducibility and Higher Efficiency Across four 10-fold Dilutions**  
 Standard curves for cyclophilin and  $\beta 2$  microglobulin 'Assay on Demand' gene targets across four 10-fold dilutions. For each standard curve, cDNA amplification from a dilution series with 3 replicates, 25  $\mu$ l reactions was carried out on the ABI StepOnePlus Real-Time PCR system using either Brilliant II high ROX Master Mix or a commercially available master mix run in standard mode.

This is further demonstrated in Figure 2 for a couple of 'Assays on Demand' targets (cyclophilin and  $\beta 2$  microglobulin) across four orders of magnitude where Brilliant II High ROX Master Mix generates Ct values 1.6-2.5 cycles earlier for the cyclophilin target and 1.8-2.8 cycles earlier for the  $\beta 2$  microglobulin target compared to competitor A.

Another gauge of sensitivity is the ability to reproducibly distinguish small differences in template concentrations. This can be demonstrated by detecting 2-fold differences in samples at very low copy number. Our Brilliant II QPCR High ROX Master Mix is capable of quantifying 2-fold differences (equal to 1 cycle or 1 Ct difference) in samples below 10 copies of template (Figure 3). In this example, we show 97% efficiency in the standard curve with consistent detection of 2-fold differences at each concentration.

For the best sensitivity and performance on any ABI real-time instrument, choose our next generation Brilliant II QPCR or QRT-PCR High ROX Master Mix kits. Our high ROX formulations have been developed to offer you the most accurate reference dye correction for ABI instruments, delivering improved accuracy and flexibility over a broader linear dynamic range, in a ready-to-use master mix.



**Figure 3**  
**Brilliant II high ROX Master Mix Delivers High Sensitivity to Detect Target Across 2-Fold Dilutions**  
 PCR amplification of a portion of a linearized plasmid using Brilliant II high ROX on the ABI StepOnePlus Real-Time PCR system. (A) Amplification plot for a 2-fold dilution series of linearized plasmid DNA target from 1536 copies to 3 copies. (B) Standard curve of all replicates across 10-fold dilutions, plotting quantity versus threshold cycle (Ct). Amplification efficiency was 97.4%.



#### Ordering information

QPCR and QRT-PCR Reagents	Quantity	Rxns*	Cat.Nos
Brilliant II QPCR High ROX Master Mix	2 X 2.5 ml	400	600805
Brilliant II QPCR High ROX Master Mix (10 pack)	20 X 2.5 ml	4000	600816
Brilliant II QRT-PCR High ROX Master Mix, 1-step	2 X 2.5 ml	400	600838
Brilliant II QRT-PCR High ROX Master Mix, 1-step (10 pack)	20 X 2.5 ml	4000	600842

\*assumes 25  $\mu$ l reaction volume

For more information regarding our Brilliant II QPCR and QRT-PCR high ROX master mix kits, as well as our complete QRT-PCR and QPCR reagent offering, please visit [www.stratagene.com/brilliant2](http://www.stratagene.com/brilliant2).

#### Ordering Information

Please visit: [www.agilent.com/chem/contactus](http://www.agilent.com/chem/contactus) or email us at: [stratagene\\_bioreagents@agilent.com](mailto:stratagene_bioreagents@agilent.com)

This information is subject to change without notice.

[www.stratagene.com](http://www.stratagene.com)

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