



Stratagene QPCR Systems

Stratagene Products



Agilent Technologies

Stratagene provides a total solution approach to real-time quantitative PCR (QPCR), simplifying the challenges you face in sample preparation, assay setup, and data analysis. Whether you are new to or experienced in QPCR, your individual needs are met with our comprehensive range of products and industry-leading support.

Total Real-Time Quantitative PCR Solutions

Stratagene QPCR Instruments and Reagents
from Agilent Technologies

With the addition of Stratagene real-time PCR solutions, Agilent offers the most comprehensive workflow solution for gene expression analysis. The Mx3005P system is a flexible real-time PCR instrument suited for gene expression analysis, validation of microarray data, SNP genotyping, pathogen detection, DNA methylation assays, and chromatin immunoprecipitation studies. Brilliant II QPCR reagents offer superior sensitivity of detection and accommodate rapid cycling for fast and reliable results.



Discover the Best Tools for Your Specific QPCR Research



PCR Instrument & Reagent Table of Contents

APPLICATION	PRODUCT	PAGE
QPCR Instruments		
	Mx3000P and Mx3005P QPCR Systems	2
	High-Performance, Low-Cost QPCR Systems	3
	Superior Flexibility and Performance	4
	Novel Data Analysis in the Easiest-to-Operate QPCR Software Available	6
QPCR Reagents		
	Brilliant II QPCR Reagents	8
	More Sensitive cDNA Synthesis for Two-Step QRT-PCR Applications	10
RNA Products		
	QPCR-Grade Reference RNA, DNA-Free	11
	Pure RNA from Difficult Samples	12
Selection Guide		
	Product Ordering List	13
Bioanalysis Technology		
	Agilent Bioanalyzer and Lab-on-Chip Technology	14

The Highest Performance and Flexibility in QPCR Systems

Features of the Mx3000P QPCR System

The Mx3000P System is a high-performance, full-featured instrument system designed to accommodate basic experimental design and offer the flexibility required for more advanced applications (Figure 1).

Mx3000P QPCR System

- Four optical channels with user-selected filters for greater flexibility
- Broad wavelength range excitation supports most fluorescent dyes
- Single photomultiplier tube (PMT) for detection ensures superior sensitivity, reproducibility, and linear dynamic range to 10 orders of magnitude

Features of the Mx3005P QPCR System

The Mx3005P QPCR System expands on the Mx3000P system by offering unmatched flexibility and capability to support even more real-time QPCR applications and chemistries. The system features five customer-selected filters and a custom filter path feature to support detection of a broad range of dyes (including FRET-based fluorescence and large stoke shifts). The enhanced features of the Mx3005P system will accommodate your research needs now and in the future (Figure 1 and 2).

Mx3005P QPCR System

- Five optical channels with user-selected filters for greater flexibility
- Defined excitation and emission detection wavelengths are ideal for superior multiplex results, up to five targets simultaneously (Figure 7)
- Open platform design supports virtually all fluorescent chemistries and numerous applications



Figure 1.
The Mx3000P QPCR System
Four-color, 96-well format full-featured QPCR system.
[Also includes MxPro QPCR Software]

Figure 2.
The Mx3005P QPCR System
Five-color, 96-well format, open platform QPCR system with independent filter wheel control for greater dye flexibility. (Also includes MxPro QPCR Software)

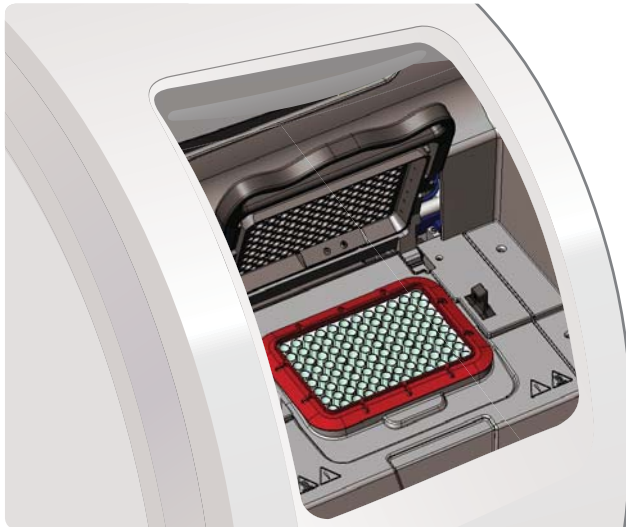
The First High-Performance, Low-Cost QPCR System

Affordable QPCR, Without Sacrificing Performance

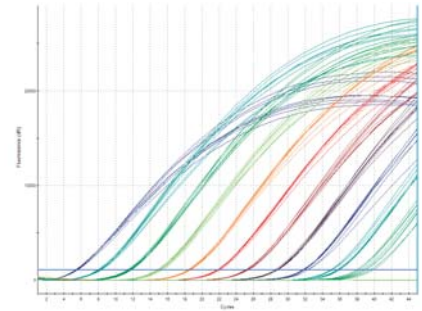
The Mx3000P QPCR System brings real-time QPCR instrumentation to the individual researcher with a limited budget. The precision optical design coupled with highly uniform thermal performance generates consistent results in even the most challenging applications (Figure 3 and 4).

Coming to You in Real-Time

- Four optical channels with user-selected filters for greater flexibility
- Easy to use MxPro QPCR Software for simple assay setup and data analysis
- Narrow wavelength excitation and emission detection wavelengths minimizes signal contamination and ensures reproducible results
- Single photomultiplier tube for detection ensures superior sensitivity, reproducibility, and linear dynamic range to ten orders of magnitude



A



B

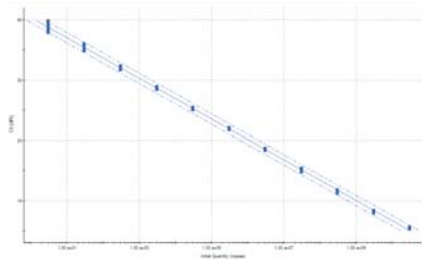


Figure 4.

Ten Orders of Magnitude Dynamic Range

The low signal to noise performance of the photomultiplier tube supports detection across a large copy number range. (A) Eight replicates of ten fold dilutions of plasmid DNA for β -actin target. (B) Standard curve displayed with 99% confidence intervals and efficiency=98% and $Rsq=0.999$.

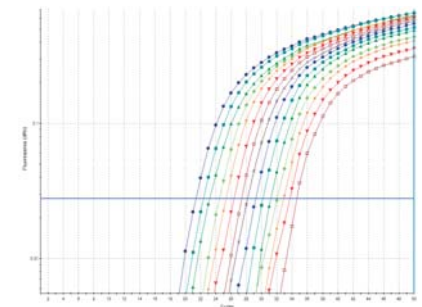


Figure 3.

Two-Fold Dilution Series

The superior optical system supports accurate quantification of two-fold differences in low copy number down to less than 10 copies. Four replicates of a dilution series from 20,000 to 1.2 copy equivalent of plasmid containing β -actin target detected with a molecular beacon. Average delta Ct between dilutions is 0.95 cycles.

Superior Flexibility and High-Performance

The Mx3005P Real-Time PCR System advances the proven Mx3000P System. Offering unmatched flexibility and capability, the Mx3005P System can support even more real-time QPCR applications and chemistries to accommodate your research needs now and in the future.

Advanced Optical System

The Mx3005P System features the same optical scanning design as the Mx3000P system. A scanning fiber optic head ensures all wells:



- 1) receive the same amount of excitation light,
- 2) are detected for the same amount of time, and
- 3) are the same distance from the detector.

The scanning motion system of the fiber optic cable eliminates optical variation based on well position in the 96-well block, thus eliminating the need for signal correction by calibration or reference dyes. The

photomultiplier tube (PMT) has a large dynamic range of detection and a low signal to noise ratio, allowing low- to high-abundance targets to be accurately quantified. Excitation light is generated by a halogen lamp and delivered to the sample through fiber optics. The fiber optic bundle is coaxial so it delivers excitation light and simultaneously detects fluorescence emission from the sample. Detected light is delivered to the PMT via the fiber optic cable (Figure 5).

The precision optic scanning design with a single light source and single detector provides uniform excitation and detection coupled with a uniform thermal system ensures highly reproducible results (Figure 6).



Figure 5
Optical System Design

The halogen lamp in the instrument systems provides a wide-range of excitation allowing more dye flexibility with more intensity than standard light emitting diodes (LEDs). The excitation and emission filters are defined to narrow wavelengths to minimize fluorescence signal crosstalk. Fiber optic bundles channel the light into the plate and back to the PMT to ensure minimal signal loss.

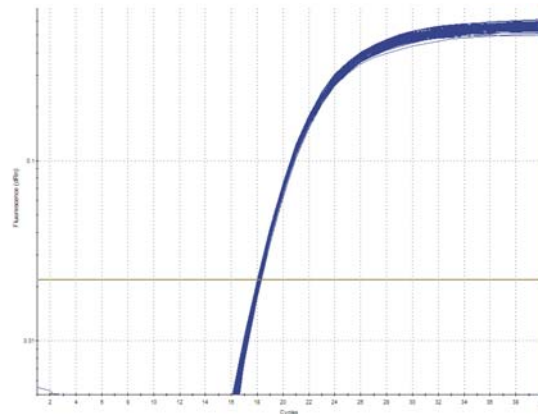


Figure 6.
96-Well Uniformity

A precision thermal design with high-performance optics supports excellent well-to-well uniformity. SYBR® Green I uniformity assay for β -actin containing plasmid. Average Ct value at threshold is 18.1 and standard deviation of Ct values is 0.05. Ct range across 96 wells is 0.26 cycles (18.00 to 18.26).

Powerful Data Analysis Software

Mx3005P Optical Filters

The new five-position user customizable filter wheel design offers a multitude of dye choices, multiplex dye combinations enabling up to five targets per well, and the ability to create custom excitation and emission filter pairs that can accommodate the rapidly expanding list of fluorescence dyes. You can choose which five filters are installed in the instrument from a list of eight filter sets spanning deep blue dyes to far red dyes thus maximizing the useable wavelength spectrum (Table 7).

Precision Thermal System

The thermal system of the Mx3005P system shares the same Peltier-based design with the Mx3000P system. This system ensures uniform ramping and thermal accuracy for amplification reproducibility from well-to-well and run-to-run (Figure 8).

Powerful Data Analysis Software

The Mx3005P system uses the most advanced version of our graphical user interface and data analysis software. The MxPro QPCR Software is easy to use and organized by application so you can easily navigate the software and run assays quickly.

Optical System Features

- Five optical channels with user-selected filters for greater flexibility
- Defined excitation and emission detection wavelengths are ideal for superior multiplex results, up to five fluorescent dyes simultaneously (Figure 7)
- Custom filter path selection to support matching of different excitation and emission filters
- Flexible platform design supports virtually all fluorescent chemistries and numerous applications

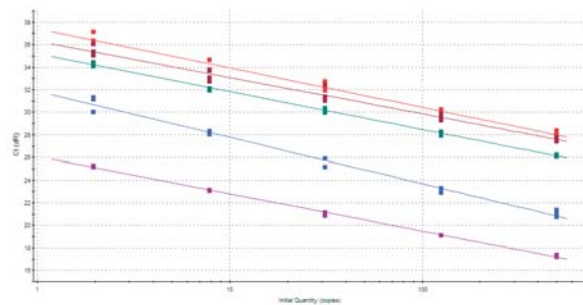


Figure 7.
5-Plex Standard Curves

Five target multiplex assay on the Mx3005P system using Alexa Fluor® 350, FAM™, HEX™, ROX™, and Cy™5 filters. Three replicates of 4-fold dilutions of QPCR Human Universal Reference cDNA detecting five gene targets simultaneously. Detection from the highest abundance to the lowest abundance gene target (CYCLO to ENOS gene targets) spans a Ct range of 17-37 (delta Ct = 20).

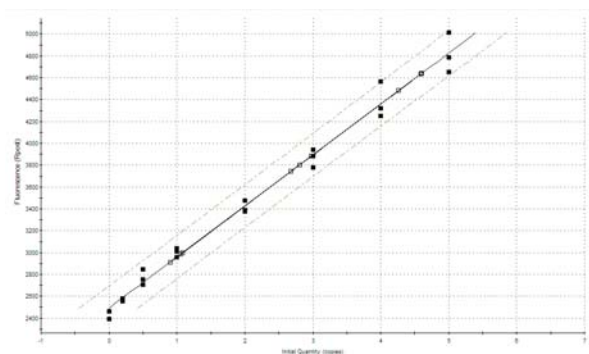


Figure 8
RNA Quantification by RiboGreen® Plate Read Experiment

Our MxPro Software supports plate read applications for quantifying nucleic acid preparations before running QPCR. Three replicates of RNA standards from 500 pg to 5 ng. Standard curve generated from plate read experiment automatically quantitates RNA concentration in unknown samples. Ideal for quick and accurate quantification of RNA samples before performing gene expression QPCR experiments.

Novel Data Analysis in the Easiest-to-Operate QPCR Software Available

The MxPro QPCR Software for the Mx3000P and Mx3005P Systems combines cutting-edge data analysis algorithms with intuitive organization designed for ultimate ease-of-use.



MxPro QPCR Software Features

- Multiple Experiment Analysis functionality
- One click setup of plate layout and thermal profile for quick start runs
- View and analyze data in real-time
- Multiple customizable data analysis algorithms for baseline correction and threshold setting
- Export images directly from the software, export the raw data to re-create the image, and export the text data in multiple formats
- 21 CFR Part 11 support

Setting Up and Running the Experiment

The experimental setup features well definition by target assay name (e.g., FAM = p53), automated standard curve setup, customized well naming, importing plates, and a flexible thermal profile setup (Figure 9).

Data Analysis and Reporting the Results

The data analysis module includes two automated and customizable methods for baseline subtraction and threshold setting. The “Adaptive Baseline” algorithm dynamically assigns baseline start and end cycles independently for all amplification plots (Figure 10).

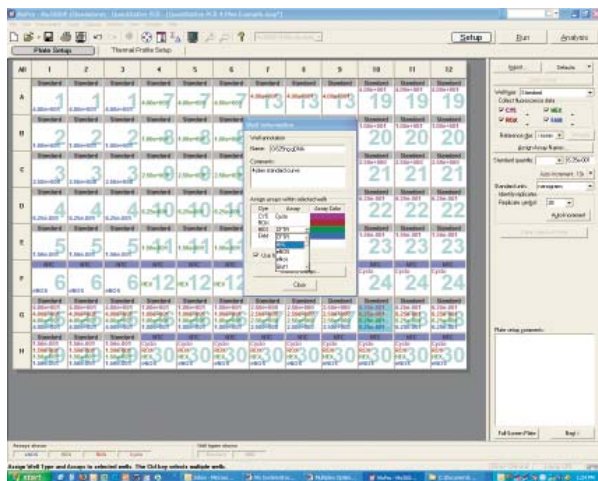


Figure 9.
Flexible, Easy to Use Plate Setup

Import Plate Setup from previous experiments or templates. Assign assay/gene target names to dyes. Setup standard curve and replicates using auto-increment feature. Add well information to identify sample name, number, quantity, or any other sample specific information.

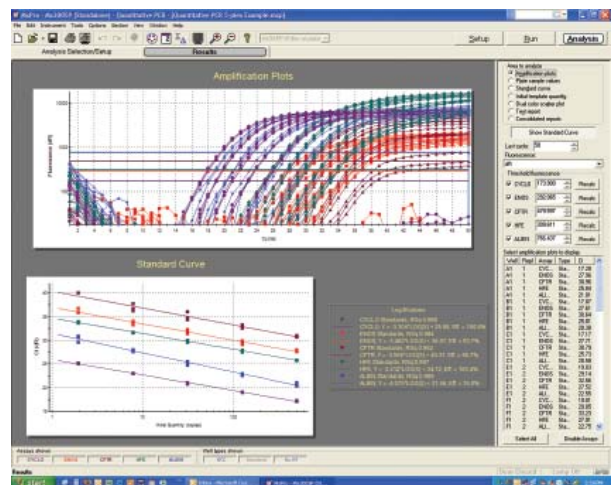


Figure 10.
Multiple Data Analysis Views

The Adaptive Baseline algorithm ensures accurate quantification across all five gene targets. Amplification plot and standard curve data can be displayed simultaneously and changes in threshold are instantly displayed on the standard curve.

Generating Data in Multiple Formats

The Comparative Quantification module automatically determines gene expression fold change, calculates statistical error, and generates a publication quality chart (Figure 11). After analysis, the MxPro QPCR software is capable of creating custom reports and exporting all plots, charts, and labels (Figure 12). Images can be directly exported to Microsoft® PowerPoint®, and high resolution bitmap images, chart and plot data can be exported to Microsoft® Excel®, using .xml, and .txt formats to easily re-create the data in different formats (Figure 13). All text data can also be exported in any of these formats.

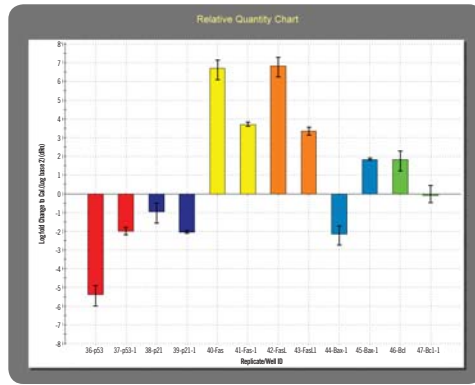


Figure 11.
Automated Analysis of Gene Expression Data

The Comparative Quantitation module in MxPro Software automatically calculates relative quantity for gene expression experiments. Data is displayed as normalized fold gene expression to a reference control on a log(2) scale with upper and lower error limits based on variation in the replicates. In the figure above, fold expression change for six genes across two treatments is displayed.

Multiple Experiment Analysis

New Multiple Experiment Analysis allows users to analyze up to 12 separate plates in one project. The power and convenience of this will enable users to speed through their work— without repetitive and time-consuming procedures.

21 CFR Part 11 Compatible

The 21 CFR Part 11 Compatible features activates secure application login, database file management, and data file audit trails. The audit trail will record changes made to the data which affect the final result, and reports can be generated for the audit trail, user accounts, and error logs.

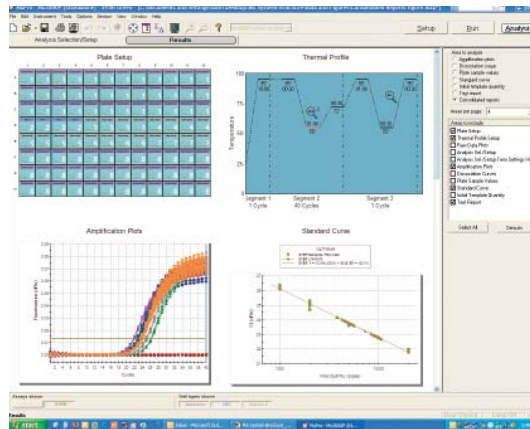


Figure 12.
Create Custom Data Reports

Create a custom data report by determining report format and which data sets to display. In the figure above, Plate Setup, Thermal Profile, Amplification Plots, Standard Curve, and Text Report are selected for the report.

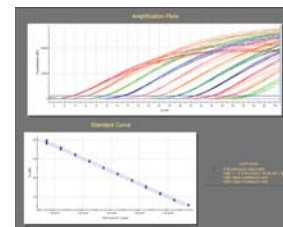
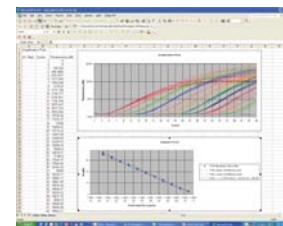
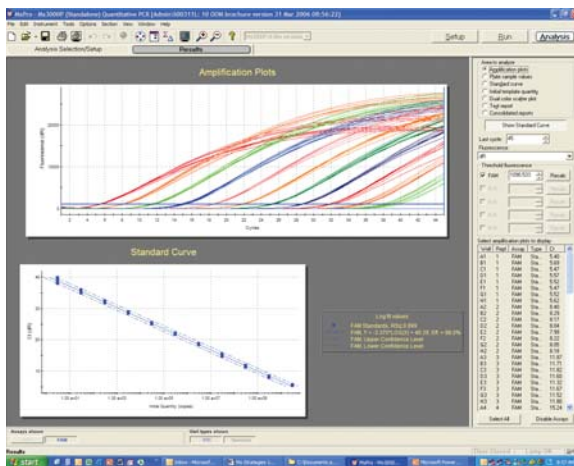


Figure 13.
MxPro QPCR Software Data Exports

The MxPro Software is designed with the flexibility to export data in many formats, including data images, charts, and text exported in multiple formats. In the figure above, ten orders of dynamic range amplification plot and standard curve data are displayed in the MxPro Software, then exported in one click to Microsoft® PowerPoint® and Excel®.

Brilliant II Real-Time Quantitative PCR Reagents



Superior Sensitivity for Improved Quantification and Reproducibility

Our next generation Brilliant II QPCR and QRT-PCR Master Mix Kits offer superior sensitivity for improved quantification and reproducibility.

Sensitive Detection of DNA or RNA using SYBR Green Dye

Our Brilliant II SYBR Green QPCR Master Mix exhibits earlier Ct detection with over twice the fluorescent intensity compared to our original Brilliant SYBR Green product and higher fluorescence than many competitor reagents. We also optimized cycling conditions for more rapid run times with increased performance when compared to other commercially available products that recommend longer duration cycling conditions.

The New Brilliant II Master Mix Kits Feature:

- Improved performance with earlier Ct detection across a wide dynamic range
- New formulations available with low and high concentrations of ROX reference dye
- Improved data reproducibility
- Greater flexibility for use with numerous different templates and targets
- More accurate quantification results
- Increased sensitivity of detection to low copy numbers

Sensitive and Specific Probe-Based Detection

The sensitivity of Brilliant II reagents also improves replicate reproducibility at lower concentrations and overall reaction efficiency across the entire range of concentration. We also tested the ability to reproducibly distinguish small differences in template concentrations. Our Brilliant II QPCR reagents are capable of quantifying 2-fold differences (equal to 1 cycle or 1 Ct difference) in samples between 5 and 2.5 copy equivalents at 95% efficiency (see Figure 14).

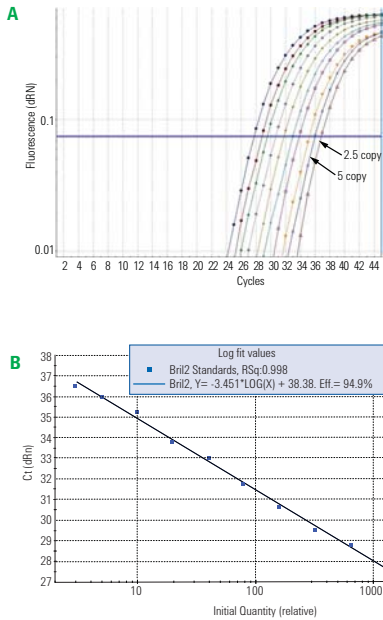


Figure 14
Superior Sensitivity and Precision to Detect Target Across 2-Fold Dilutions

Amplification plot (semi-log) of 2-fold dilutions of linearized plasmid (14A). Brilliant II QPCR reagents exhibit precise detection of 2-fold differences from 1280 copies down to ~2.5 copies. The average delta Ct across all 10 dilutions is 1 cycle and the standard curve curve efficiency equals 95% (14B).

Using the table below and on page 10 you can select the appropriate reagent kit for your real-time PCR instrument.

Format	DNA (cDNA) Quantification	RNA Quantification	2-Step
Master Mix	Brilliant II QPCR Master Mix (Cat No. 600804)	Brilliant II QRT-PCR Master Mix, 1-Step (Cat No. 600809)	Brilliant II QRT-PCR, AffinityScript Master Mix, 2-Step (Cat No. 600827)
	Brilliant II FAST QPCR Master Mix (Cat No. 600845)		
Master Mix with ROX Reference Dye Premixed (Low and High ROX concentrations for different QPCR systems)	Brilliant II QPCR Low ROX Master Mix (Cat No. 600806)	Brilliant II QPCR Low ROX Master Mix, 1-Step (Cat No. 600837)	AffinityScript QPCR cDNA Synthesis Kit (Cat No. 600559) plus Brilliant II QPCR Low ROX Master Mix (Cat No. 600806) or Brilliant II QPCR High ROX Master Mix (Cat No. 600805)
	Brilliant II QPCR High ROX Master Mix (Cat No. 600805)	Brilliant II QPCR High ROX Master Mix, 1-Step (Cat No. 600838)	
RNA Preparation and Amplification		SideStep II QRT-PCR Master Mix Kit, 1-Step (Cat No. 400917)	SideStep II QRT-PCR Master Mix Kit 2-Step (Cat No. 400918)

Table 1.
Select the appropriate probe-based detection kit for your real-time PCR instrument

Brilliant II FAST QPCR Reagents

Designed to Perform

Introducing the Next Generation of Brilliant II FAST Master Mixes. These reagents were developed to create a system for completing QPCR reagents in less time without compromising target detection sensitivity, specificity or reproducibility.

- Accelerated cycling protocol that completes 40 cycles of PCR in approximately 48 minutes
- Rapid Hotstart capability to minimize non-specific product formation while reducing run time
- Improved performance with earlier Ct detection across a wide dynamic range
- Increased sensitivity of detection to low copy numbers

- Simultaneously amplifies low and high abundance targets
- Maximizes analysis of limited or rare samples
- Allows detection of multiple targets plus an internal control
- Saves time and increases throughput

Alien Reference RNA QRT-PCR Detection Kit

The new Alien reference RNA is a valuable tool for validating the quality of experimental RNA samples, interpreting the quality of QRT-PCR data, and monitoring the overall performance of QRT-PCR assay reagents and instrumentation.

- Non-homologous to known sequences
- High-quality external control
- Use of Probe-Based Detection enables gene of interest and Alien RNA to be run in the same tube using multiplex detection
- Ideally suited for assay standardization applications

Multiplex Up to Four Targets Simultaneously

The Brilliant Multiplex QPCR Master Mix is ideal for QPCR amplification of three to five targets in a single reaction (Figure 15).

- Amplifies up to 4 targets in a single reaction

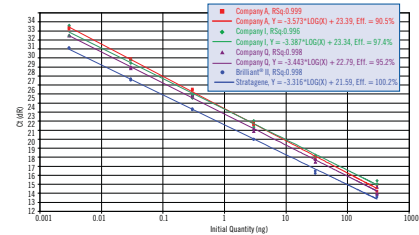


Figure 15. Brilliant II QPCR Reagents Deliver Better Sensitivity and Reproducibility Over a Wide Range of Concentrations

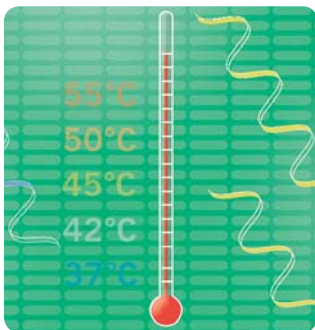
Standard curve plot of 10-fold dilutions in duplicate from 300 ng down to 30 pg of cDNA. The Brilliant II master mix detects template at ~1-2 Cts earlier on average, with better efficiency, and tighter replicates at the lower concentrations (signal detection by a linear hydrolysis probe for cyclophilin target).

Format	DNA (cDNA) Quantification	RNA Quantification	2-Step
Master Mix	Brilliant II SYBR® Green QPCR Master Mix (Cat No. 600828)	Brilliant II SYBR® Green QRT-PCR Master Mix, 1-Step (Cat No. 600825)	Brilliant II SYBR® Green QRT-PCR AffinityScript Master Mix, 2-Step (Cat No. 600834)
	Brilliant II FAST SYBR® QPCR Master Mix (Cat No. 600843)		
Master Mix with ROX Reference Dye Premixed (Low and High ROX concentrations for different QPCR systems)	Brilliant II SYBR® Green QPCR Low ROX Master Mix (Cat No. 600830)	Brilliant II QPCR Low ROX Master Mix, 1-Step (Cat No. 600835)	AffinityScript QPCR cDNA Synthesis Kit (Cat No. 600559) plus Brilliant II SYBR® QPCR Low ROX Master Mix (Cat No. 600830) or Brilliant II SYBR® QPCR High ROX Master Mix (Cat No. 600829)
	Brilliant II SYBR® Green QPCR High ROX Master Mix (Cat No. 600829)	Brilliant II QPCR High ROX Master Mix, 1-Step (Cat No. 600836)	
RNA/DNA Preparation and Amplification	Brilliant SYBR® Green SideStep QPCR Master Mix (Cat No. 400904)		SideStep II SYBR® Green QRT-PCR Master Mix Kit 2-Step (Cat No. 400909)

Table 2. Select the appropriate SYBR-based detection kit for your real-time PCR instrument

More Sensitive cDNA Synthesis for Two-Step QRT- PCR Applications

Following RNA purification, or cell lysate generation, one-step or two-step QRT-PCR is employed. For the analysis of multiple genes from a single sample, RNA is converted into cDNA. An aliquot of cDNA can then be removed and PCR-amplified in real time. Our cDNA synthesis and two-step QRT-PCR kits are exclusively master mix formats for highest reproducibility and sensitivity. Importantly, all are qualified for use in real-time applications.



cDNA Synthesis for QPCR

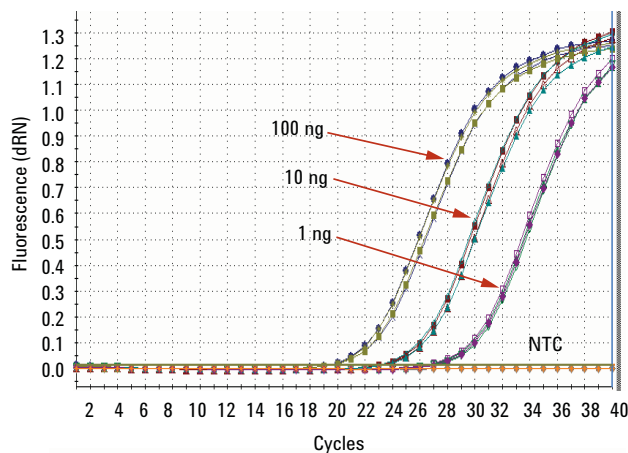
The AffinityScript QPCR cDNA Synthesis Kit^a is designed for high-efficiency conversion of RNA to cDNA and is fully optimized for real-time quantitative PCR applications (Figure 16). The high sensitivity obtained with this kit is due to the inclusion of our QPCR-grade AffinityScript Multiple Temperature Reverse Transcriptase (RT) and a high-efficiency cDNA synthesis buffer. The AffinityScript QPCR cDNA synthesis kit is formatted as a master mix that reduces pipetting steps and enhances reproducibility in two-step QRT-PCR. It also employs a fast, 15-minute protocol for most targets.

Robust Reverse Transcription

Our AffinityScript multiple temperature reverse transcriptase synthesizes a complementary DNA strand from single-stranded RNA, DNA, or an RNA:DNA hybrid.

Two-Step QRT-PCR Kits Using Affinity Script QPCR cDNA Synthesis Kit

Achieve sensitive and specific QRT-PCR in a flexible two-step format. These kits are composed of two modules. First, RNA is reverse-transcribed using the AffinityScript QPCR cDNA synthesis kit, using our QPCR-grade, AffinityScript RT in just 15 minutes. The cDNA of interest is then quantified using the second real-time PCR module, using any of our Brilliant II SYBR or probe-based master mixes.



Temperature (°C)	RNA Amount	Ct (dRn)
42	100 ng	19.27
42	10	23.00
42	1	26.59
42	NTC	No Ct
50	100 ng	19.30
50	10	22.83
50	1	26.31
50	NTC	No Ct
55	100 ng	19.44
55	10	23.12
55	1	26.92
55	NTC	No Ct

Figure 16. The AffinityScript QPCR cDNA Synthesis Kit Delivers Robust cDNA Synthesis Across Multiple Temperatures

We synthesized cDNA from total RNA using different reaction temperatures (42, 50, and 55°C) with oligo dT primers. Template amounts indicated are RNA amounts added at the cDNA synthesis level (100 ng, 10 ng, 1 ng). Using our Brilliant SYBR[®] Green QPCR Master Mix for QPCR amplification of the ODC gene, the same Ct was observed for each RNA input regardless of RT reaction temperature (Panel A). For example, using 100 ng, the Ct for 42°C was 19.27; for 50°C, 19.30; for 55°C, 19.44 (Panel B).

QPCR-Grade Reference RNA, DNA-Free

Stratagene QPCR Reference Total RNAs are high-quality, universal RNA controls for quantitative PCR gene-expression analysis. In order to reliably compare data across multiple experiments and instruments, it is essential to have a constant reference material to assess the performance of each QPCR reaction and quantify gene expression levels.

Maximal Gene Representation

The Stratagene QPCR Reference Total RNAs are used to directly compare data between multiple experiments (Figure 17). These RNAs are extracted from quality cell lines representing different human and mouse tissues, pooled together for maximal gene representation. The broad gene coverage allows you to use the RNA reference material as a universal reference for nearly any human or mouse gene being investigated in QPCR experiments. These high-quality human or mouse total RNA controls are manufactured for maximum representation of low, medium, and high-abundance gene transcripts. Our QPCR reference total RNAs are qualified for QPCR and guaranteed to be free of genomic DNA. We manufacture these control RNAs at industrial scale lot sizes and perform stringent quality control to maximize lot-to-lot reproducibility.

We offer QPCR reference total RNA from both human and mouse cells. The QPCR Human Reference Total RNA is a collection of RNA pooled from 10 human cell lines derived from different tissues. The QPCR Mouse Reference Total RNA is derived from RNA pooled from 11 mouse cell lines which are also derived from tissues. We choose cell lines, rather than tissues, as our starting material since we have found that this is the most consistent and highest quality source of RNA.



Stratagene QPCR Human Reference RNA (QHRR)

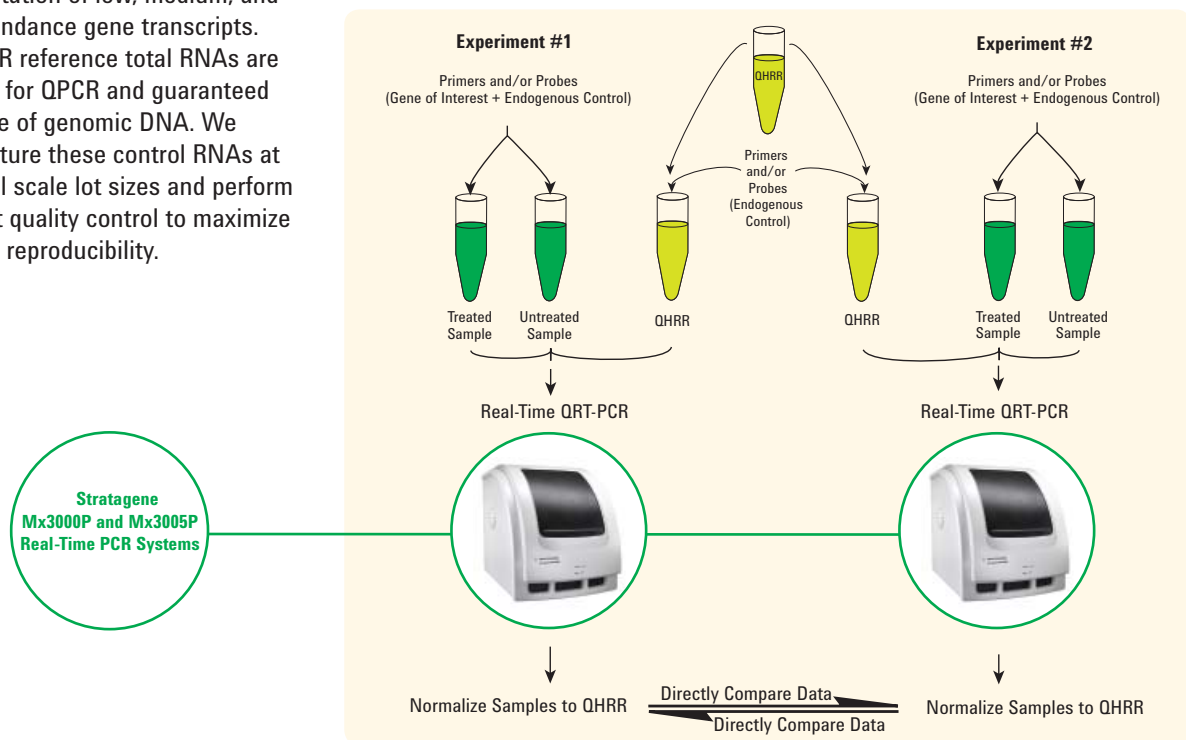


Figure 17.

Accurately Measure Relative Expression Levels and Compare Data from Multiple Experiments

Use the Stratagene QPCR Reference Total RNA to measure endogenous control levels alongside your treated and untreated samples. Normalize samples to the endogenous control to determine relative expression levels of your gene of interest.

Pure RNA from Difficult Samples

Archived tissue specimens are rich sources of material for extensive analysis of mRNA expression utilizing QRT-PCR. However, the chemical nature of fixatives and fixation time significantly affects the quality of RNA and DNA extracted from these tissues. Moreover, reliable recovery of RNA from small cell populations, such as LMD cells, are also particularly challenging to analyze by QRT-PCR.



Formalin-Fixed Paraffin-Embedded (FFPE) Tissue

The Absolutely RNA FFPE Kit delivers a reliable, easy to use, non-toxic method to isolate quality RNA from difficult paraffin-embedded tissue sections and includes a quantitative total RNA reference standard for meaningful QRT-PCR expression analysis. Using a standard proteinase K digestion protocol is ineffective at reversing the RNA modifications caused by the fixation process, resulting in poor and unreliable RNA recovery. In contrast, our method completely reverses the RNA

modifications and therefore more RNA is accessible for real-time QRT-PCR analysis than with other kits. High, medium, and low abundance genes can be quantified reliably and calibrated against the QPCR-grade reference RNA (Figure 18).

Laser-Microdissected Cells

Laser micro-dissection (LMD) is a technique used to isolate a pure subpopulation of cells from tissue sections containing a heterogeneous mixture for detailed molecular analysis. Isolating high-quality total RNA from LMD-recovered cells can be challenging and inefficient when standard methods are used. In contrast, our Absolutely RNA Microprep and Nanoprep Kits effectively isolate pure RNA from small samples while avoiding ethanol precipitation. The Absolutely RNA nanoprep kit is the only kit qualified to isolate RNA from a single cell. It elutes pure RNA into small, 10- μ l elution volumes using our specially designed spin cups (Table 3).

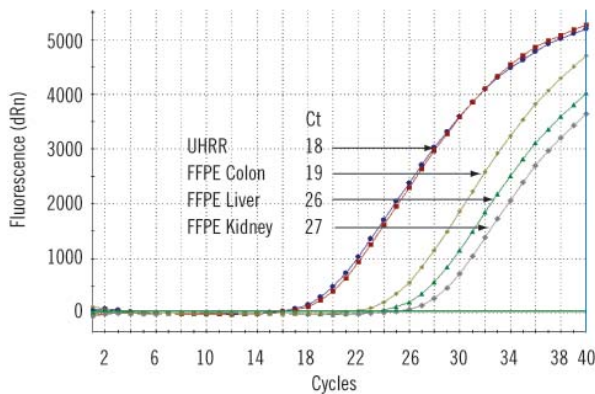


Figure 18.
The Absolutely RNA FFPE Kit Extracts RNA of Sufficient Yield and Concentration for Downstream QRT-PCR Analysis

Cyclophilin gene expression level was determined using RNA isolated from various formalin fixed paraffin-embedded (FFPE) human tissues using the Absolutely RNA FFPE Kit. The Stratagene QPCR Total Human Reference RNA was used to calibrate expression levels. (Mx3000P QPCR System)

Reagent	Absolutely RNA Miniprep Kit	Absolutely RNA Microprep Kit	Absolutely RNA 96 Microprep Kit	Absolutely RNA Nanoprep Kit	Absolutely RNA FFPE Kit
Sample Size	10 ⁵ to 10 ⁷ cells or 5-40 mg of tissue	Up to 5 x 10 ⁵ cells	Up to 5 x 10 ⁵ cells	1 x 10 ⁴ cells down to a single cell	Formalin-fixed paraffin embedded tissues
Format	Fiber matrix spin cup	Fiber matrix spin cup	Fiber matrix spin cup 96-well format	Fiber matrix spin cup	Fiber matrix spin cup
Capacity	> 200 μ g RNA	50 μ g RNA	50 μ g RNA	Approx. 200 ng RNA	50 μ g RNA
Elution Volume	50 μ l	30 μ l	30 μ l	10 μ l	30 μ l

Table 3
Choose the Absolutely RNA Kit that Suits Your Sample Type and Size

Product Listings

QPCR Systems		Catalog No.
Mx3000P QPCR System 4-color system (110v) with notebook computer		401403
4-color system (110v) with desktop computer		401405
4-color system (230v) with notebook computer		401406
4-color system (230v) with desktop computer		401407
Mx3005P QPCR System 5-color system (110v) with notebook computer		401449
5-color system (110v) with desktop computer		401456
5-color system (230v) with notebook computer		401457
5-color system (230v) with desktop computer		401458
MxPro ET (Electronic Tracking) QPCR Software		
New and existing Mx QPCR System users		401467
Multi-user license agreement for six users		401468
QPCR and QRT-PCR Reagents		
Brilliant II QPCR Master Mix	400 rxn	600804
Brilliant II QPCR Master Mix (10 pack)	4000 rxn	600815
Brilliant II QRT-PCR Master Mix, 1-Step	400 rxn	600809
Brilliant II QRT-PCR Master Mix, 1-Step (10 pack)	4000 rxn	600818
Brilliant II QRT-PCR Core Reagent Kit, 1-Step	400 rxn	600810
Brilliant II QRT-PCR Core Reagent Kit, 1-Step (10 pack)	4000 rxn	600819
Brilliant II QRT-PCR, AffinityScript Master Mix, 2-step	400 rxn	600827
Brilliant II QPCR Low ROX Master Mix	400 rxn	600806
Brilliant II QPCR Low ROX Master Mix (10 pack)	4000 rxn	600817
Brilliant II QPCR High ROX Master Mix	400 rxn	600805
Brilliant II QPCR High ROX Master Mix (10 pack)	4000 rxn	600816
Brilliant II QRT-PCR Low ROX Master Mix, 1-Step	400 rxn	600837
Brilliant II QRT-PCR Low ROX Master Mix, 1-Step (10 pack)	4000 rxn	600841
Brilliant II QRT-PCR High ROX Master Mix, 1-Step	400 rxn	600838
Brilliant II QRT-PCR High ROX Master Mix, 1-Step (10 pack)	4000 rxn	600842
Brilliant II SYBR Green QPCR Master Mix	400 rxn	600828
Brilliant II SYBR Green QPCR Master Mix (10 pack)	4000 rxn	600831
Brilliant II SYBR Green Low Rox Master Mix	400 rxn	600830
Brilliant II SYBR Green High Rox Master Mix	400 rxn	600829
Brilliant II SYBR Green High Rox Master Mix (10 pack)	4000 rxn	600832
Brilliant II SYBR Green Low Rox Master Mix (10 pack)	4000 rxn	600833
Brilliant II SYBR Green QRT-PCR Master Mix, 1-Step	400 rxn	600825
Brilliant II SYBR Green QRT-PCR Master Mix, 1-Step	4000 rxn	600826
Brilliant II SYBR Green QRT-PCR AffinityScript Master Mix, 2-step	400 rxn	600834
Brilliant II SYBR QRT-PCR Low ROX Master Mix, 1-Step	400 rxn	600835
Brilliant II SYBR QRT-PCR High ROX Master Mix, 1-Step	4000 rxn	600836
Brilliant II SYBR QRT-PCR Low ROX Master Mix, 1-Step (10 pack)	4000 rxn	600839
Brilliant II SYBR QRT-PCR High ROX Master Mix, 1-Step (10 pack)	4000 rxn	600840
Brilliant II FAST SYBR Green QPCR Master Mix	400 rxn	600843
Brilliant II FAST SYBR Green QPCR Master Mix (10 pack)	4000 rxn	600844
Brilliant II FAST QPCR Master Mix	400 rxn	600845
Brilliant II FAST QPCR Master Mix (10 pack)	4000 rxn	600845
Sample Preparation		
Absolutely RNA FFPE Kit	50 preps	400809
Absolutely RNA FFPE Kit (w/o deparaffinization reagents)	50 preps	400811
Highly Pure Total RNA		
Absolutely RNA Microprep Kit	50 preps	400805
Absolutely RNA 96 Microprep Kit	2 plates	400793
	10 plates	400794
Absolutely RNA Miniprep Kit	50 preps	400800
Absolutely RNA Nanoprep Kit	50 preps	400753
Messenger RNA Isolation		
Absolutely mRNA Purification Kit	10 preps	400806
cDNA Synthesis for Two-Step QRT-PCR		
AffinityScript Multiple Temperature Reverse Transcriptase	10 rxn	600105
	50 rxn	600107
	200 rxn	600109
Universal QPCR Control RNAs		
AffinityScript QPCR cDNA Synthesis Kit	50 rxn	600559
Stratagene QPCR Reference Total RNA, Human	25 µg	750500
Stratagene QPCR Reference Total RNA, Mouse	25 µg	750600

Sophisticated Bioanalysis Instrumentation

The Agilent 2100 Bioanalyzer

- A complete array of applications (DNA, RNA, proteins, and cells)
- The gold standard for RNA QC, 21CFR Part 11 compliance, and full-compliance services
- Sophisticated user-friendly software with multiple functionality

Applied Lab-on-a-Chip Technology

The Agilent 2100 Bioanalyzer is an indispensable tool for molecular biology labs. It allows the objective measurement of RNA samples using our patented RIN algorithm, size, and concentration determination of DNA or protein samples, and measurement of unique cellular events using the cell application. Utilizing Lab-on-a-Chip technology, the Agilent 2100 Bioanalyzer combines multiple sample analysis procedures (sample handling, separation, staining, and detection) on a single chip, thereby improving precision and reproducibility over traditional electrophoretic methods. A full line of validated reagents ensures consistent, reliable results.



Agilent Bioanalyzer Instruments	Catalog No.
2100 Electrophoresis Bioanalyzer (PC not included)	G2939AA
2100 Bioanalyzer Desktop Bundle (cartridge not included)	G2940CA
2100 Bioanalyzer Electrophoresis Set (cartridge/license)	G2947CA
2100 Bioanalyzer Flow Cytometry Set (cartridge/license)	G2948CA
2100 Bioanalyzer Laptop Bundle (cartridge not included)	G2943CA
2100 Bioanalyzer Electrophoresis Set (cartridge/license)	G2947CA
2100 Bioanalyzer Flow Cytometry Set (cartridge/license)	G2948CA
Desktop Bundle (computer & SW upgrade only)	G2950CA
Laptop Bundle (computer & SW upgrade only)	G2953CA

Gold Standard Lab-on-a-Chip Technology



RNA



DNA



Protein



Cell

RNA Solutions	Description	Contents	Catalog No.
RNA 6000 Nano Kits	For analysis and quantitation of messenger and total RNA in the low- to mid- nanogram range	Reagents, supplies, 25 chips, 2 cleaning chips, 1 syringe, and reagent kit guide. A lower marker and ladder is included with the RNA Nano reagents	5067-1511
RNA 6000 Pico Kits	For analysis and quantitation of messenger and total RNA in the low- to high- picogram range.	Reagents, supplies, 25 chips, 2 cleaning chips, 1 syringe, and reagent kit guide. A lower marker and ladder are included with the RNA Pico reagents.	5067-1513
Small RNA Kits	For analysis of small RNAs in the range of 6 – 150 nt in low-picogram sensitivity.	Reagents, supplies, 25 chips, 2 cleaning chips, 1 syringe, and reagent kit guide. A lower marker and ladder is included with the small RNA reagents.	5067-1548
Cooled RNA 6000 Nano Reagents and Supplies	For use with the Agilent 2100 Bioanalyzer and RNA 6000 Nano kits. Comprises reagents and supplies box.		5067-1512
Frozen RNA 6000 Nano Ladder	For use with the Agilent 2100 Bioanalyzer and RNA 6000 Nano kits. Comprises frozen Nano ladder.		5067-1529
Cooled RNA 6000 Pico Reagents and Supplies	For use with the Agilent 2100 Bioanalyzer and RNA 6000 Pico kits. Comprises reagents and supplies box.		5067-1514
Frozen RNA 6000 Pico Ladder	For use with the Agilent 2100 Bioanalyzer and RNA 6000 Nano kits. Comprises frozen Pico ladder.		5067-1535
Cooled Small RNA Reagents and Supplies	For use with the Agilent 2100 Bioanalyzer and small RNA kits. Comprises reagents and supplies box.		5067-1549
Frozen Small RNA Ladder	For use with the Agilent 2100 Bioanalyzer and small RNA kits. Comprises frozen small RNA ladder.		5067-1550
DNA Solutions	Description	Contents	Catalog No.
DNA 1000 Kits	For high resolution sizing and quantitation of dsDNA fragments from 25 to 1000 bp.	Reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1504
DNA 7500 Kits	For accurate sizing and quantitation of dsDNA fragments from 100 to 7500 bp.	Reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1506
DNA 12000 Kits	For sizing and quantitation of dsDNA fragments from 100 to 12000 bp.	Reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1508
Cooled DNA 1000 reagents and supplies	For use with the Agilent 2100 Bioanalyzer and DNA 1000 kits. Comprises reagents and supplies box.		5067-1505
Cooled DNA 7500 reagents and supplies	For use with the Agilent 2100 Bioanalyzer and DNA 7500 kits. Comprises reagents and supplies box.		5067-1507
Cooled DNA 12000 reagents and supplies	For use with the Agilent 2100 Bioanalyzer and DNA 12000 kits. Comprises reagents and supplies box.		5067-1509
Protein Solutions	Description	Contents	Catalog No.
Protein 230 Kits	For rapid sizing and analysis of proteins from 14 to 230 kDa.	Reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1517
Protein 80 Kits	For rapid sizing and analysis of proteins from 5 to 80 kDa.	Reagents, supplies, 25 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1515
High-Sensitivity Protein 250 Kits	For rapid sizing and analysis of proteins from 10 to 250 kDa in silver staining range (down to low pg/ μ l).	Reagents, supplies, 10 chips, 1 cleaning chip, 1 syringe and reagent kit guide.	5067-1575
Cooled Protein 230 and Supplies	For use with the Agilent 2100 Bioanalyzer and Protein 230 kits. Comprises reagents and supplies box and appropriate cool pack.		5067-1518
Cooled Protein 80 and Supplies	For use with the Agilent 2100 Bioanalyzer and Protein 80 kits. Comprises reagents and supplies box and appropriate cool pack.		5067-1516
Cooled High-Sensitivity Protein 250 and Supplies	For use with the Agilent 2100 Bioanalyzer and HSP-250 kits. Comprises all required separation and labelling reaction reagents.		5065-1576
Cooled High-Sensitivity Protein 250 Labelling Reagents	For use with the Agilent 2100 Bioanalyzer and HSP-250 kits. Comprises labelling reagents.		5065-1577
Cooled High-Sensitivity Protein 250 Ladder	For use with the Agilent 2100 Bioanalyzer and HSP-250 kits. Comprises ladder only.		5065-1578
Cell Solutions	Description	Contents	Catalog No.
Cell Kits	For analysis of cell fluorescence parameters.	Reagents, 25 chips, and reagent kit guide.	5065-1519
Cell Checkout Kits	For testing proper cell assay operation.	Reagents, 7 checkout chips, red beads, blue beads and reagent kit guide.	5065-1520
Cell Assay Extension	Required to perform simple flow cytometric analysis with the Agilent 2100 Bioanalyzer (for "B" and "C" series instruments only). Includes pressure cartridge, cell fluorescence software, cell fluorescence, checkout kit, cell test chip kit, and start-up service.		G2948CA



* This is a Licensed Real-Time Thermal Cycler(s) or Licensed Real-Time Temperature Cycling Instrument(s) under ABI's United States Patent No. 6,814,934 and corresponding claims in non-U.S. counterparts thereof, for use in research and for all other applied fields except human *in vitro* diagnostics. No right is conveyed expressly, by implication or by estoppel under any other patent claim.

Absolutely mRNA, AffinityScript, MxPro, and SideStep are trademarks of Stratagene in the United States. Absolutely RNA, Brilliant, FullVelocity, Mx3000P, and Mx3005P are registered trademarks of Stratagene in the United States.

Agilent is a registered trademark of Agilent Technologies. Excel® and PowerPoint® are registered trademarks of the Microsoft Corporation.

SYBR® is a registered trademark of Molecular Probes.

Scorpions™ is a trademark of DxS Ltd.

TaqMan® is a registered trademark of Roche Molecular Systems, Inc.

TRI Reagent® is a registered trademark of Molecular Research Center, Inc.

FAM™, TET™, HEX™, VIC™, JOE™, TAMRA™, and ROX™ are trademarks of Applied Biosystems or its subsidiaries in the US and certain other countries.

Cy™3 and Cy™5 are trademarks of Amersham Biosciences.

RiboGreen® is a registered trademark of Molecular Probes.

- a. Patents Pending
- b. Use of labeling reagents may require licenses from entities other than Stratagene. For example, use of fluorogenic probes in 5' nuclease assays may require licenses under U.S. Patent Nos. 6,214,979, 5,804,375, 5,210,015 and 5,487,972 owned by Roche Molecular Systems, Inc. and under U.S. Patent No. 5,538,848 owned by Applied Biosystems. TaqMan® is a registered trademark of Roche Molecular Systems, Inc

www.stratagene.com

Ordering Information

U.S. and Canada:

1-800-424-5444 x3

agilent_inquiries@agilent.com

Asia Pacific:

adinquiry_aplsc@agilent.com

Europe:

info_agilent@agilent.com

Distributors

For a list of worldwide distributors, please visit our website

www.stratagene.com

This information is subject to change without notice.

© Stratagene, an Agilent Technologies company, 2009
Printed in USA, January 01, 2009
5990-3495EN

