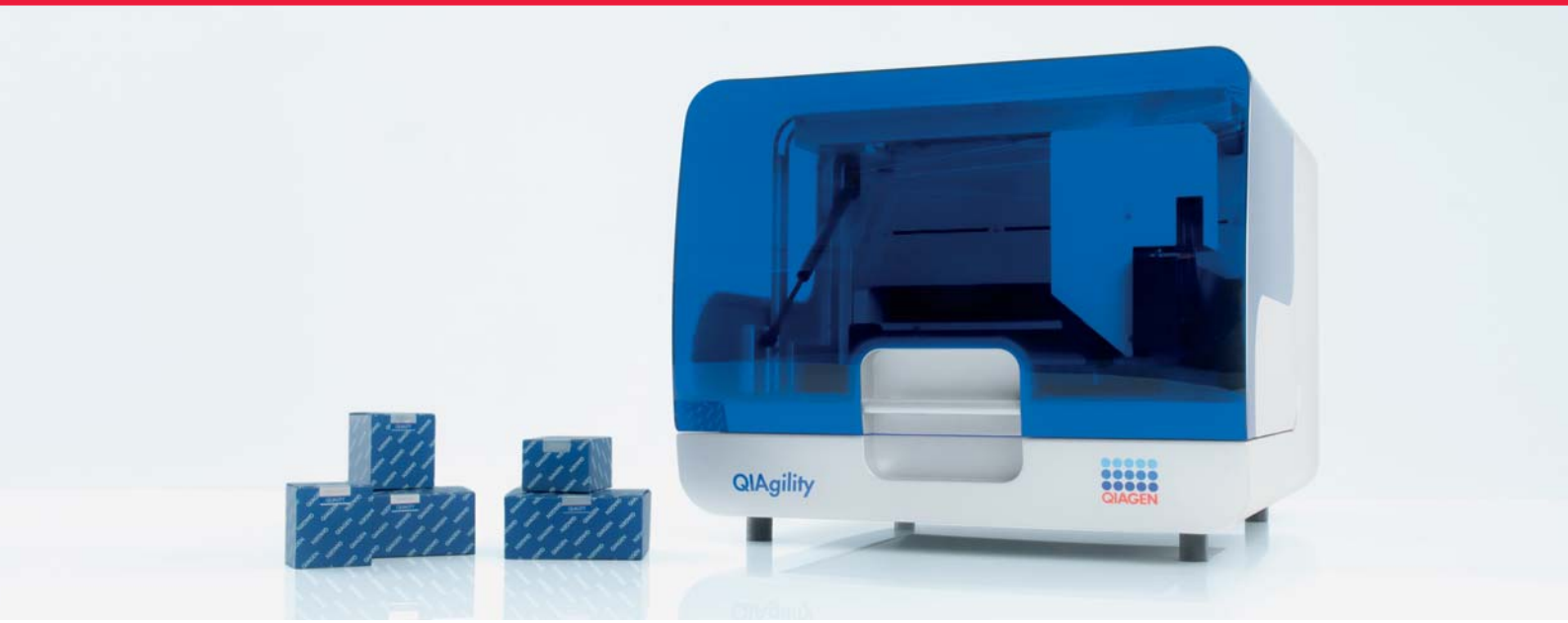
QIAgility™ — Pure Precision

QIAGEN®

Sample & Assay Technologies



Fully automated sample and assay technologies

The QIAgility is a compact benchtop instrument that enables automated PCR setup in a wide range of formats, including PCR assays for the Rotor-Gene™ Q. The high precision of the QIAgility delivers the reproducible results you need in your end-point and real-time PCR assays, from sample to sample and laboratory to laboratory. Automated PCR setup is rapid and reliable and eliminates manual pipetting steps that can be prone to human error. The unmatched versatility of the QIAgility means that almost all tube and plate formats are supported as well as Rotor-Discs for the Rotor-Gene Q.

The QIAgility provides:

- Automated PCR setup in all formats
- Convenient, easy-to-use software
- Standardized results and increased productivity
- Elimination of manual pipetting steps
- Seamless integration with QIAGEN® sample technologies

The QIAgility is operated via a computer with easy-to-use software. Simply select a program, set up the worktable, and walk away during PCR setup. Samples are ready for immediate use in downstream applications.

Advanced technology for pure precision

Dynamic liquid-level sensing enables the QIAgility to deliver high-precision, standardized pipetting (Table 1 and Figure 1). The instrument senses the meniscus during each pipetting event and retracts the tip while dispensing, enhancing accuracy and minimizing liquid carry-over. If the liquid is viscous, the QIAgility can adapt its pipetting speed accordingly.

Exceptional safety features

The advanced design of the QIAgility delivers improved process safety, giving you peace of mind. An in-built sensor ensures that the instrument pauses when the hood is opened during a run, protecting users from moving parts. An optional UV light ensures effective worktable decontamination and an optional HEPA filter provides positive clean air pressure throughout PCR setup. These safety features are complemented by intelligent safety warnings from the instrument software, should an error occur.

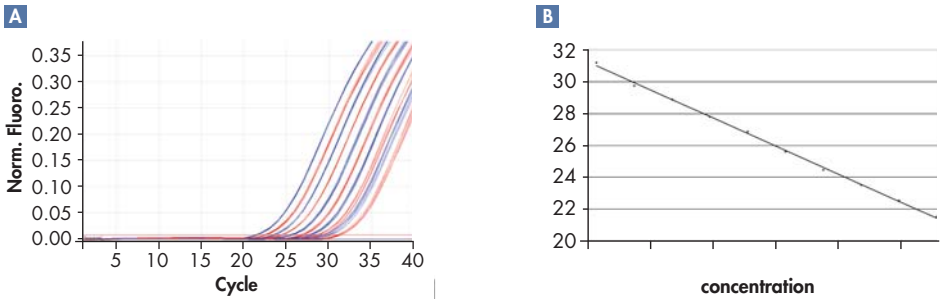


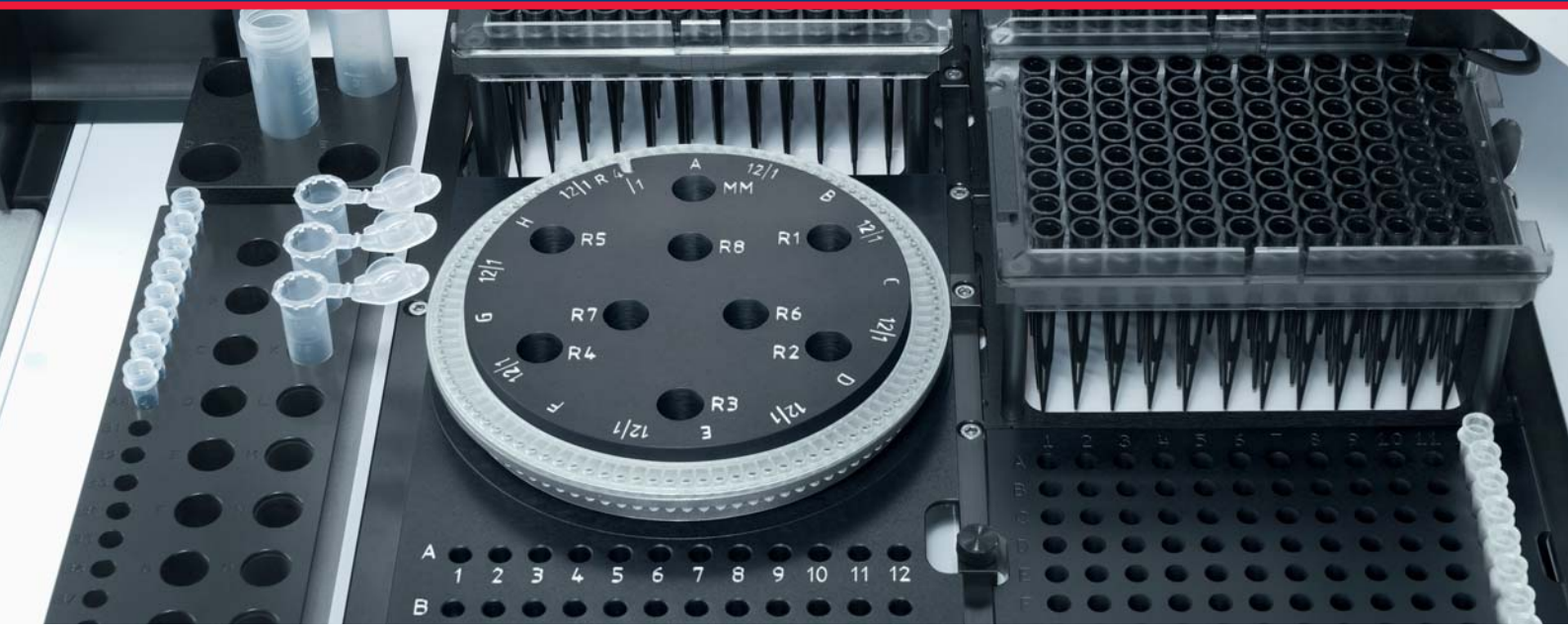
Figure 1. Exceptional reproducibility and accurate series dilutions. A 2-fold series dilution of human genomic DNA (30 ng to 0.6 ng) was performed using the QIAgility. IL1R2 was amplified from these dilutions, using the Rotor-Gene Q and the QuantiFast® Probe PCR Kit. Reactions were set up in replicates of 5. DNA yields were quantified by quantitative, real-time PCR, where the Rotor-Gene Q was also used for analysis. Plots show A highly precise and reproducible replicates with a 1 cycle difference between each 2-fold dilution and B the standard curve.

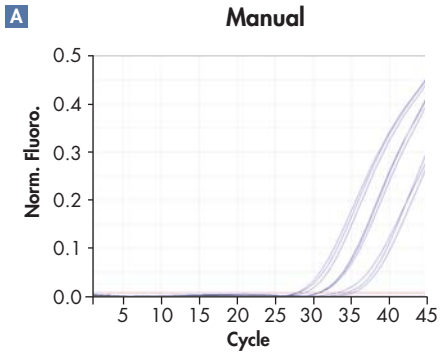
Table 1. Unrivaled precision

Volume (µl)	Mean (mg)	S.D. (mg)	CV (%)
1	0.99	0.06	5.64
2	2.03	0.05	2.20
5	5.02	0.03	0.56
10	9.99	0.02	0.24
20	19.97	0.04	0.22
50	49.99	0.05	0.10
100	100.84	0.14	0.14
150	150.79	0.25	0.17
200	198.82	0.26	0.13

The QIAgility was used to pipet 1, 2, 5, 10, 20, 50, 100, 150, and 200 µl water, in replicates of 16. The actual volume pipetted was determined for all aliquots based on weight (i.e., 1 g=1000 µl). The mean, standard deviation (S.D.), and coefficient of variation (CV) was calculated for each volume.

Reproducible results from sample to sample and laboratory to laboratory





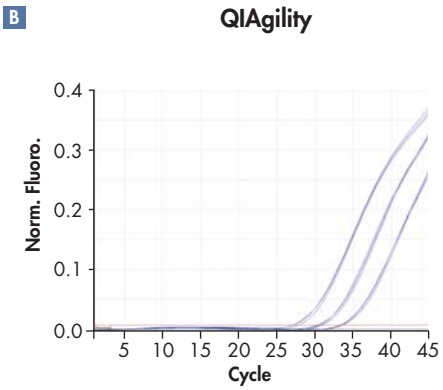


Figure 3. Automated reaction setup is more accurate than manual reaction setup. IL12RB1 was amplified from leukocyte RNA (1, 10, and 100 ng), using the Rotor-Gene Q and the QuantiFast Probe RT-PCR Kit. Replicates of 3 were set up A manually and B using the QIAgility. DNA yields were quantified by quantitative, real-time RT-PCR, where the Rotor-Gene Q was also used for analysis.

Absolute reliability and reproducibility

The QIAgility is provided with optimized protocols for unmatched reliability and reproducibility. In the future, more protocols will become available. Manual pipetting steps, which are typically prone to human error, are eliminated (Figure 2 and Figure 3). Using the software in "Virtual Mode" enables user-developed protocols to be tested in the absence of reagents, avoiding costly repetition of experiments. To reduce your work load, there is no need for time-consuming manual documentation of runs since comprehensive run reports, containing all run information, are generated before and after each protocol.

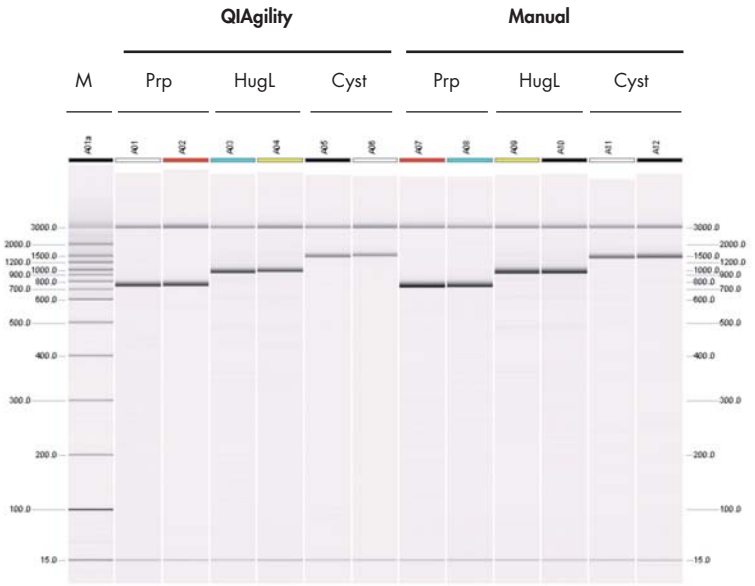
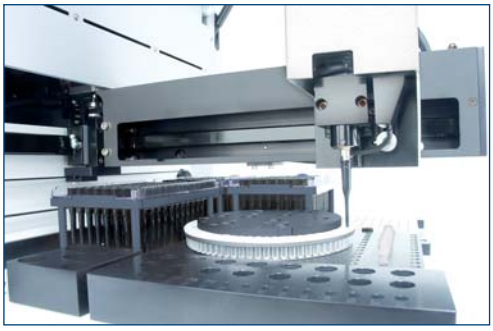


Figure 2. Eliminate manual pipetting steps. Prp, HugL and Cyst were amplified from human genomic DNA (10 ng). PCR reactions were set up using the TopTaq™ Master Mix Kit, in replicates of 2, using the QIAgility and manually. After cycling, reactions were analyzed by capillary electrophoresis, using the QIAxcel™.

Flexible workflow with built-in versatility

The QIAgility is compatible with all your workflow needs. The worktable is easy to set up and, for optimal versatility, is configured to support almost all PCR tube types and plate formats, including 96-well and 384-well plates as well as Rotor-Discs for the Rotor-Gene Q. The QIAgility can set up multiple master mixes and can process multiple PCR setups in parallel.



In addition to PCR setup, the flexibility of the QIAgility allows the user to program an unrivaled range of high-precision pipetting applications, which includes:

- Normalization of DNA and RNA concentration
- Transfer of liquid samples from one tube format to another
- Serial dilutions with variable dilution ratios
- Restriction digest setup
- Sample pooling
- Selective pipetting from archived sample banks

Complete your fully automated workflow

The QIAgility fully automates proven QIAGEN PCR kits (Table 2). Visit www.qiagen.com for up-to-date product information. For increased convenience, the QIAgility provides a broad range of output formats, enabling compatibility with all real-time cyclers, including the Rotor-Gene Q. When used in combination with the EZ1® Advanced automated solutions, the QIAgility can complete and enhance your automated, real-time PCR workflow (see next page).

Table 2. Use the QIAgility to fully automate proven QIAGEN PCR kits.

Application	Method	Kit	Description
Gene expression analysis	Real-time RT-PCR	Rotor-Gene Kits	Rapid and reliable RT-PCR on the Rotor-Gene Q.
	Real-time RT-PCR	QuantiFast Kits	Fast, sensitive RT-PCR on any real-time cycler.
	Real-time RT-PCR	QuantiTect® Kits	Sensitive RT-PCR on any real-time cycler.
	End-point RT-PCR	QIAGEN OneStep RT-PCR Kit	Sensitive RT-PCR, with simple setup, using any RNA template.
Virus detection	Real-time PCR and RT-PCR	QuantiTect Kits	Highly sensitive detection of multiple viral DNA and RNA targets in the same tube.
	End-point RT-PCR	QIAGEN OneStep RT-PCR Kit	Highly sensitive detection of viral RNA.
Genotyping	End-point PCR	Type-it™ PCR Kits	Accurate and reliable SNP genotyping, mutation detection, and microsatellite analysis.
Cloning	End-point PCR and RT-PCR	QIAGEN LongRange Kits	Sensitive and accurate amplification of extremely long PCR products.
	End-point PCR	HotStar HiFidelity Polymerase Kit	High-fidelity, hot-start PCR.
Pathogen detection	Real-time PCR	*cador*™ veterinary PCR Kits	Ready-to-use, validated real-time PCR assays to detect veterinary pathogens.
Standard and specialized PCR applications	End-point PCR	HotStarTaq® and HotStarTaq *Plus* Kits	Highly specific hot-start PCR without optimization.
	End-point PCR	QIAGEN *Taq* Kits	Highly reliable PCR at first attempt.
	End-point PCR	QIAGEN Fast Cycling PCR Kit	Rapid and specific PCR on any thermal cycler.
	End-point PCR	TopTaq Kits	Unmatched reliability with unrivaled ease-of-use.

Automated solutions from sample to result — free up your time!

Purification

EZ1 Advanced
EZ1 Advanced XL
Nucleic acid purification solution using magnetic-particle technology

Assay setup

QIAgility
PCR setup system

Detection and analysis

Rotor-Gene Q
Real-time PCR cycler

Real-time PCR

Efficient, walkaway automation

The QIAgility enables rapid and efficient processing of complex reaction setups, freeing up your valuable laboratory time (Table 3). The single-channel pipet can process up to 96 samples in just 17 minutes, providing enormous time savings and eliminating tedious manual pipetting which can cause repetitive strain injury. While the QIAgility is performing reaction setup, the user can concentrate on more important laboratory tasks.

Table 3. Speed and versatility.

Application	Description	Number of reactions	Tip reuse?	Tip consumption	Run time (minutes)
Normalization	One-step dilution	96	No	108 x T^{50}*	28
Reformatting	1:1 transfer	96	No	96 x T^{50}	17
Plate replication	1:4 transfer	96–384	No	154 x T^{50}	71
Plate replication	1:4 transfer	96–384	Yes	96 x T^{50}	46
Serial dilution	16 concentrations	16 dilutions	No	32 x T^{50}	7
Repetitive aliquoting	Primer solution (2 ml) into aliquots (20 µl)	96 aliquots	Yes (8 times)	12 x T^{50}	10
Repetitive aliquoting	Primer solution (2 ml) into aliquots (20 µl)	96 aliquots	No	96 x T^{50}	17
Preparation of standards	6 concentrations	6 dilutions	No	11 x T^{50} 5 x T^{200} †	3
Master mix preparation	8 components for 96 samples	96	Yes (8 times)	10 x T^{200}	6
PCR setup	Premixed master mix	96	Yes (8 times)	108 x T^{50}	36
PCR setup	Master mix preparation	96	Yes (8 times)	110 x T^{50} 10 x T^{200}	39
PCR setup	Premixed master mix and prediluted	96	Yes (8 times)	108 x T^{50}	36
PCR setup	Master mix preparation and standard dilution	96	Yes (8 times)	115 x T^{50} 15 x T^{200}	41

* T^{50}=50 µl Tips. † T^{200}=200 µl Tips.

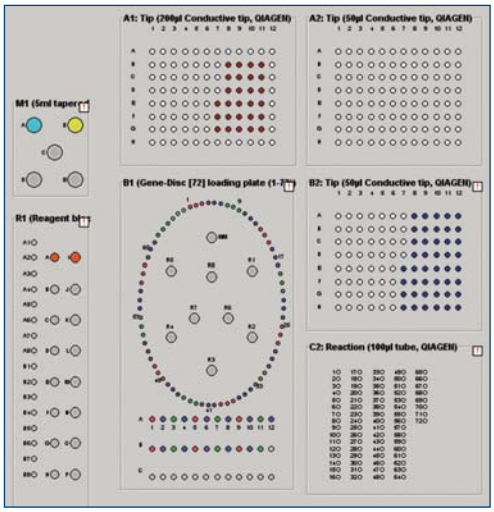
The QIAgility can be used in a wide range of liquid-handling operations. The user can control tip usage, enabling cost-efficient use of consumables. Reactions can be set up using master mix that has already been prepared, or the QIAgility can prepare the master mix.

Intuitive software for ease of use

With the QIAgility, specialist training is not required. QIAgility software simulates the instrument worktable, making it exceptionally easy to use by the automation novice or more experienced laboratory personnel. Fast setup and development of user protocols are facilitated by wizards, which guide the user through software procedures in a stepwise fashion. The QIAgility is preinstalled with optimized protocols for convenient and effective PCR setup. The software automatically calculates reagent volumes for the selected number of samples, giving you complete cost control. In addition, the user can develop custom protocols tailored to specific research requirements.

Comprehensive service and support

QIAGEN Instrument Service provides flexible service support agreements tailored to your needs. We also provide Warranty PLUS extended warranties, giving you complete cost control and enhanced coverage through priority response times.



Specifications of the QIAgility

Dimensions	Width: 55 cm (21.6 in.) Depth: 63 cm (24.8 in.) without cables Height: 45 cm (17.7 in.) hood closed
Weight	41 kg (90.2 lb.) standard configuration
Electrical requirements	100–240 V, 250 VA, 50–60 Hz, 5 A fuse
Sample throughput	1–96 samples per run
Warranty	1 year warranty on parts and labor

Visit www.qiagen.com/goto/QIAgility to find out more!

Ordering Information

Product	Contents	Cat. no.
QIAgility System (incl. PC)	Robotic workstation for automated PCR setup (without UV light and HEPA filter), 1 year warranty on parts and labor, installation and training included	9001531
QIAgility System HEPA/UV (incl. PC)	Robotic workstation for automated PCR setup (with UV light and HEPA filter), 1 year warranty on parts and labor, installation and training included	9001532
Rotor-Disc 100 Starter Kit	Kit includes: 2 Rotor-Disc 100 packs, Rotor-Disc Heat Sealer, Rotor-Disc Heat Sealing Film, Rotor-Disc 100 Rotor and Locking Ring, Rotor-Disc 100 Loading Block, Rotor-Disc Pipetting Aid	Inquire
Rotor-Disc 72 Starter Kit	Kit includes: 3 Rotor-Disc 72 packs, Rotor-Disc Heat Sealer, Rotor-Disc Heat Sealing Film, Rotor-Disc 72 Rotor and Locking Ring, Rotor-Disc 72 Loading Block, Rotor-Disc Pipetting Aid	Inquire
50 µl Conductive Filtered Tips (960)	Conductive Filtered Tips for use with the QIAgility (960 x 50 µl)	990512
200 µl Conductive Filtered Tips (960)	Conductive Filtered Tips for use with the QIAgility (960 x 200 µl)	990522
Tip Receptacle Box (10)	Tip Receptacle Boxes for disposal of used tips from the QIAgility (10)	990550
5 ml Tube; Graduated, Flat-Base (50)	Graduated, Flat-Base Tubes for use with the QIAgility (50 x 5 ml)	990552
Reagent Trough Lid 70 ml (10)	Reagent Trough Lid for use with the QIAgility (10 x 70 ml)	990554
Reagent Trough Lid 170 ml (20)	Reagent Trough Lid for use with the QIAgility (20 x 170 ml)	990556
Reagent Trough Lid 270 ml (15)	Reagent Trough Lid for use with the QIAgility (15 x 270 ml)	990558

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Purchase of this product (Rotor-Gene, QuantiFast, and QuantiTect SYBR Green Kits) is accompanied by a limited, non-transferable immunity from suit to use it with detection by a dsDNA-binding dye as described in U.S. Patents Nos. 5,994,056 and 6,171,785 and corresponding patent claims outside the United States for the purchaser's own internal research. No real-time apparatus or system patent rights or any other patent rights, and no right to use this product for any other purpose are conveyed expressly, by implication or by estoppel.

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