

BioRobot[®] MDx — Pure Accessibility



BIO ROBOT MDx

Sample & Assay Technologies



Walkaway automation for molecular laboratories

The BioRobot MDx provides fully automated, high-throughput purification of DNA and RNA from a range of human sample types using trusted QIAamp® and PAXgene® Kits (Table 1). It is particularly well-suited for high-throughput human molecular applications such as studies of infectious disease, genetic testing, genotyping, and oncology research.

Table 1. BioRobot kits

Analyte purified	Sample type	Kit
Genomic DNA	Fresh or frozen human whole blood or buffy coat	QIAamp DNA Blood BioRobot MDx Kit
Viral RNA and DNA simultaneously	Serum, plasma, cell-culture supernatants, other cell-free body fluids	QIAamp Virus BioRobot MDx Kit and QIAamp 24 Virus BioRobot MDx Kit
Bacterial and viral DNA	Liquid transport media, urine, swabs	QIAamp Media MDx Kit
Cellular RNA	Human whole blood stabilized in PAXgene Blood RNA Tubes	PAXgene Blood RNA MDx Kit
Viral DNA, viral RNA, and genomic DNA	Cells, serum, whole blood, CSF, respiratory samples, stool samples, swabs; DNA purification from a range of bacteria	QIAamp One-For-All Nucleic Acid Kit

High throughput, low effort

The BioRobot MDx provides the same high quality purification as manual procedures, but with automated high-quality processing of up to 96 samples per run. Fast processing and short run times easily enable throughput of up to 300 preps per day. Using this walkaway instrument, the researcher simply loads the samples and leaves the BioRobot MDx to perform the purification procedure. Highly pure nucleic acids are ready in 2–3 hours (depending on the sample type and nucleic acids purified).

Benefits of the BioRobot MDx

The BioRobot MDx provides high-performance, front-end sample processing for a wide range of molecular downstream processes. Benefits of the system include:

- Easy to use and highly reliable error-free processing
- Flexible throughput and applications
- Optimized and customized protocols using proven chemistries
- High-quality services and support
- Process safety through full bar code and sample tracking

Flexibility in throughput and application

High flexibility in throughput and sample type means that the BioRobot MDx easily adapts to changing laboratory needs. Whether throughput increases or decreases, applications change, or multiple sample types are used, the BioRobot MDx easily fits into the workflow. This flexibility guarantees laboratory results and return on investment into the future.

Specialized protocols to suit your needs

Preinstalled protocols are available for a wide range of samples, to enable the majority of applications. In addition, QIAGEN offers customized protocols developed by QIAGEN experts with extensive experience in processing complex samples. These protocols have been developed in line with QIAGEN's Total Quality Management Procedure with defined SOPs to guarantee the same high sample-handling efficiency as the standardized, preinstalled protocols.

Examples of protocols developed for the BioRobot MDx include nucleic acid purification from respiratory samples such as sputum and swabs, genomic DNA purification from blood cards, and isolation of circulating nucleic acids from plasma.

Safeguards ensure reliable performance

When working with the BioRobot MDx, error-free processing is assured throughout the run.

The user is guided step-by-step through worktable setup by instructions on the computer screen, allowing use of the instrument with minimal user training.

An automated load check is performed at the start of every procedure. The expiration date of all barcoded reagents is checked, as well as reagent volumes, ensuring that there is sufficient reagent for the entire run. In addition, the load check also checks that plasticware is correctly loaded and that there are sufficient filter-tips for the run.

Clots and clogged membranes (e.g., when processing blood samples) are automatically detected and the system does not continue processing the affected sample. Adjacent samples are processed without risk of contamination.

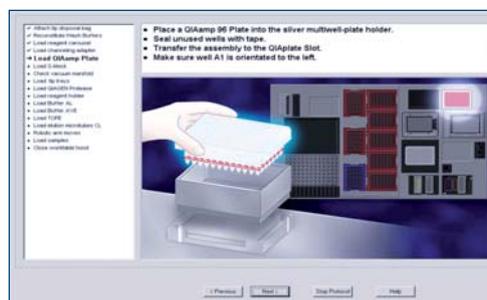
High-precision pipetting and hardware features such as channeling adapters used during vacuum processing minimize the risk of cross-contamination. Data management is made easy by full process documentation and continuous sample tracking.



Features such as advanced vacuum technology facilitate high yields of nucleic acid free of cross-contamination.



Customized protocols are developed in QIAGEN's application labs using defined SOPs.



Easy-to-understand, guided worktable setup.



Innovative software and hardware ensure successful results

The combination of user-friendly software and precision hardware built to the highest technical specifications provides highly reliable sample processing and full documentation of results. The BioRobot MDx fits seamlessly into your laboratory workflow, delivering high-quality nucleic acids and freeing up your time to focus on analysis of results.



Software-controlled buffer tracking ensures uninterrupted processing.



Fast bar code scanning provides accuracy and reliability.

Secure sample and data management

QIAsoft MDx software, the controlling software for the BioRobot MDx, provides comprehensive process documentation and easy information export and import to databases or laboratory information management systems (LIMS). The software enables simple administration of users, and users must log in to run protocols.

QIAsoft MDx software guides system setup and performs load checks, minimizing failed runs. Monitoring of key process parameters such as temperature and pressure maintains optimal processing conditions.

Continuous sample and consumable tracking

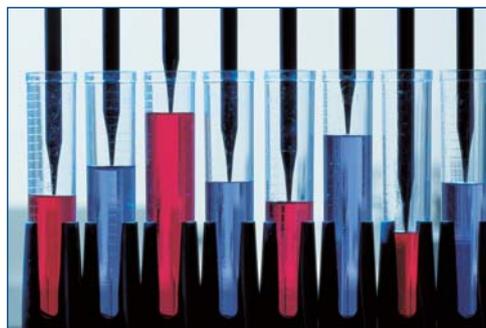
An onboard bar code scanner tracks sample ID from sample input throughout the entire sample preparation process, enabling fully traceable results. The report file generated at the end of the protocol run provides information about sample ID, sample validity, operator name, instrument name, maintenance status, etc., and is also time-stamped.

Consumables are identified either manually using a handheld bar code scanner or automatically using an internal scanner.

The reagent carousel uses a buffer tracking system to identify bottles placed in the reagent rotor and to check expiration dates.

Verification by liquid-level sensors

The liquid-level detection system uses sensors to monitor buffer and reagent volumes, as well as sample input amount, ensuring error-free processing. The system prevents the user from working without sufficient reagent volumes and alerts the user if the membrane plate is clogged. Cross-contamination-free processing, liquid-level controlled sample aspiration, and verification of sample dispense steps guarantee reliable pipetting.



Liquid-level sensing eliminates many potential errors.

High-speed liquid dispensing

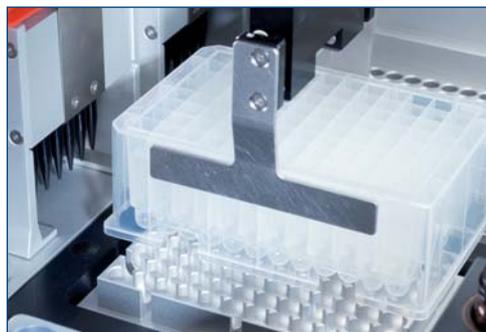
The high-speed dispensing system provides short processing times by delivering a continuous flow of buffers and other liquids through 8 channels simultaneously. This patent-pending dispensing technology ensures that all 8 channels accurately dispense volumes as small as 200 μ l and helps to reduce tip consumption.



High-speed dispensing delivers a continuous flow of buffers leading to short run times.

Rapid cooling and heating

The cooling and heating system fully automates cooling and heating of samples from 4°C to 80°C. Heating of samples is performed twice as fast as conventional heating systems due to extremely short ramp times. Protocol run times are significantly shortened.



Efficient cooling and heating speeds up run times.

Efficient vacuum system

The automated vacuum system enables walkaway sample preparation. Patent-pending technology developed at QIAGEN ensures extremely efficient removal of contaminants and ethanol from membranes and provides reproducible elution volumes, higher recovery, and cross-contamination-free processing.



Proprietary design ensures high sample handling efficiency.

Peace of mind with highly reliable service support

The molecular biology and engineering expertise offered by QIAGEN Instrument Service guarantees optimal performance and maximum return on investment from your automated system. With a broad portfolio of Service Support Agreements, regulatory support, ISO 9001/ISO 13485 certification, and an international team of highly qualified and experienced Support Specialists, QIAGEN Instrument Service delivers the high-quality instrument service and application support you deserve.



Our flexible Service Support Agreements are designed to provide peace of mind by minimizing instrument downtime, and include:

- Full Cover Agreements for annual coverage and priority response
- Preventive maintenance to ensure optimal instrument performance
- Warranty extensions to increase the length of the warranty period
- Out-of-Warranty Special Agreements for long-term coverage

Our application support service includes:

QIAGEN Application Agreements: Our specialists help you develop or optimize an automated application. Two types of Agreement are available: the Mission Pack which is valid for 1 year and provides you with 6 days of application support or the Project Pack which is valid for 3 years and provides you with 12 days of application support. Application Agreements enable application development and can include comprehensive training and consultative services.

QIAGEN Training Program: QIAGEN offers basic or specialized training programs that can be tailored to suit your needs and the number of attendees.

Ordering Information

Product	Contents	Cat. no.
BioRobot MDx	Robotic workstation, computer-controlled vacuum pump, computer, QIAsoft MDx Operating System, laboratory cabinet, accessory cabinet, installation and training, 1-year warranty on parts and labor	900600
Warranty PLUS 2	3-year warranty, 2 preventive maintenance visits per year, 48-hour priority response, all labor, travel, and parts	9238868
QIAamp DNA Blood BioRobot MDx Kit (12)	For 12 x 96 DNA preps: 12 QIAamp 96 Plates, Buffers, QIAGEN Protease, Elution Microtubes CL, Caps, S-Blocks, Tape Pad	965152
QIAamp Virus BioRobot MDx Kit (12)	For 12 x 96 preps: 12 QIAamp 96 Plates, RNase-Free Buffers, QIAGEN Protease, Elution Microtubes CL, Caps, S-Blocks, Carrier RNA	965652
QIAamp 24 Virus BioRobot MDx Kit (12)	For 12 x 24 preps: 12 QIAamp 24 Plates, RNase-Free Buffers, QIAGEN Protease, Elution Microtubes CL, Caps, S-Blocks, Carrier RNA	965612
QIAamp Media MDx Kit (12)	For 12 x 96 preps: 12 QIAamp 96 Plates, Buffers, Proteinase K, S-Blocks, Disposable Troughs, Racks with Elution Microtubes CL, Carrier RNA, Top Elute Fluid, Caps, Tape Pad	965752
QIAamp One-For-All Nucleic Acid Kit (12)	For 12 x 96 preps: 12 QIAamp 96 Plates, RNase-Free Buffers, QIAGEN Protease, Elution Microtubes CL, Caps, S-Blocks, Carrier RNA	965672
PAXgene Blood RNA MDx Kit (4)	For 4 x 96 RNA preps: 4 PAXgene 96 RNA Plates, 4 PAXgene 96 Filter Plates, Buffers, Proteinase K, RNase-Free DNase Set, Plasticware, Collection Vessels; to be used with PAXgene Blood RNA Tubes	762431

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

www.qiagen.com

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Austria = Orders 0800-28-10-10 = Fax 0800-28-10-19 = Technical 0800-28-10-11

Belgium = Orders 0800-79612 = Fax 0800-79611 = Technical 0800-79556

Brazil = Orders 0800-557779 = Fax 55-11-5079-4001 = Technical 0800-557779

Canada = Orders 800-572-9613 = Fax 800-713-5951 = Technical 800-DNA-PREP (800-362-7737)

China = Orders 86-21-3865-3865 = Fax 86-21-3865-3965 = Technical 800-988-0325

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Germany = Orders 02103-29-12000 = Fax 02103-29-22000 = Technical 02103-29-12400

Hong Kong = Orders 800 933 965 = Fax 800 930 439 = Technical 800 930 425

Ireland = Orders 1800 555 049 = Fax 1800 555 048 = Technical 1800 555 061

Italy = Orders 800-789 544 = Fax 02-334304-826 = Technical 800-787980

Japan = Telephone 03-6890-7300 = Fax 03-5547-0818 = Technical 03-6890-7300

Korea (South) = Orders 080-000-7146 = Fax 02-2626-5703 = Technical 080-000-7145

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Switzerland = Orders 055-254-22-11 = Fax 055-254-22-13 = Technical 055-254-22-12

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