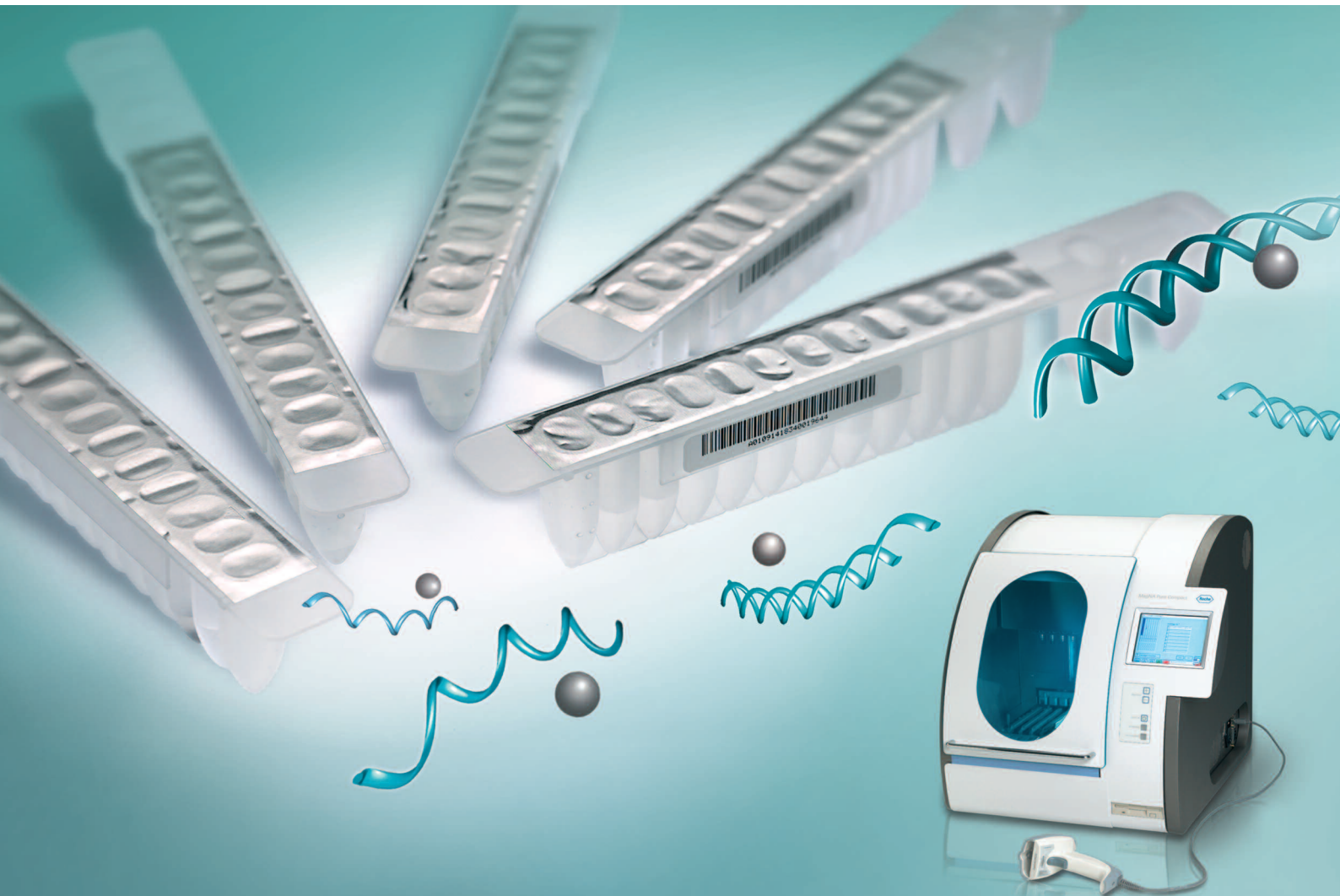


MagNA Pure

MagNA Pure Compact System

Versatile Nucleic Acid Purification



The MagNA Pure Compact System is the automated benchtop solution for nucleic acid purification. With its small instrument size, extensive integrated features, such as conveniently prefilled reagents and disposables, and a sample throughput of one to eight samples per run, the instrument meets the demanding nucleic acid isolation needs of research laboratories with low to medium sample throughput.

MagNA Pure Compact Instrument _____ **4**

MagNA Pure Compact Software _____ **7**

MagNA Pure Compact Reagent Kits _____ **8**

MagNA Pure Compact Nucleic Acid Isolation Kit I

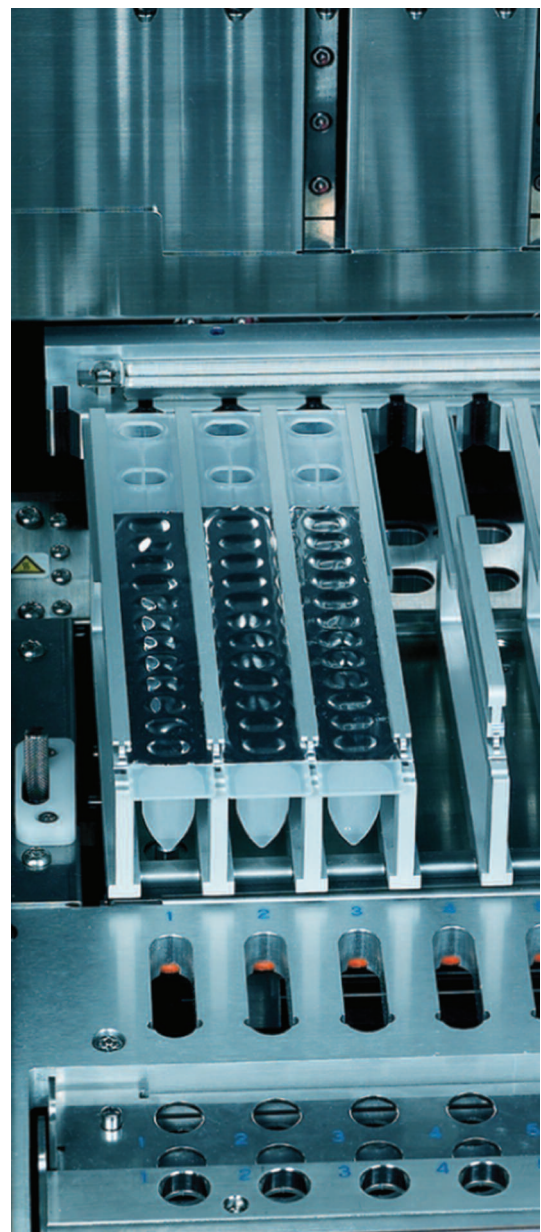
MagNA Pure Compact Nucleic Acid Isolation Kit I

– Large Volume

MagNA Pure Compact RNA Isolation Kit

Additional Products _____ **12**

Ordering Information _____ **13**



For general laboratory use

The MagNA Pure Compact System

*Versatile Nucleic Acid Purification –
Smart. Small. Simple.*

Conserve valuable laboratory space

with the small footprint.

Obtain high-quality nucleic acids

from diverse sample types with proven reagent chemistry.

Incorporate a variety of protocols

using different specimen and elution volumes for a broad range of sample materials.

Save time through easy setup with prefilled reagents and disposables.

Eliminate contamination with prefilled reagents and disposables, an integrated HEPA filter, and synchronized stage movement.

Ensure isolation success with a sensor for tip loss, clot, and cartridge detection.

Track sample identification with the supplied bar-code scanner.

Simplify documentation via host connectivity.

Navigate easily with the intuitive software and touch-screen monitor.



▲ Figure 1: The MagNA Pure Compact Instrument

The MagNA Pure Compact Instrument

Automated benchtop nucleic acid purification

Save space in your lab – small instrument footprint design

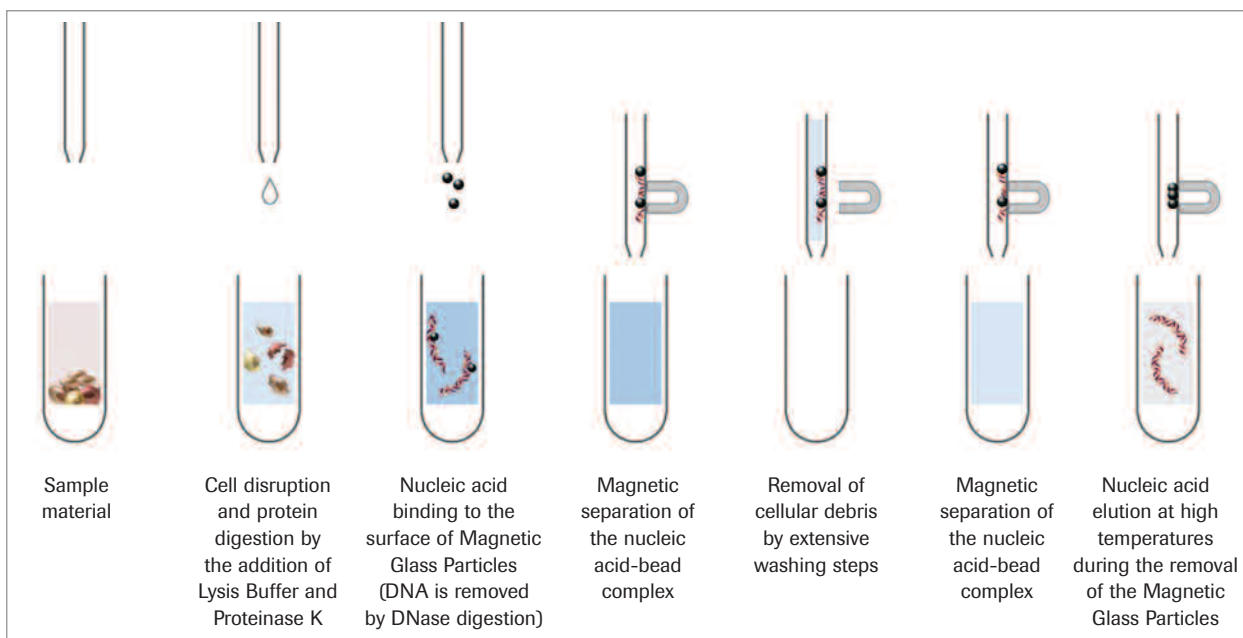
Benefit from a benchtop instrument with a small footprint (540 mm W x 610 mm D [21.3 in W x 24.0 in D]). The MagNA Pure Compact Instrument fits on all conventional laboratory countertops. Even in labs with limited space, you can integrate automated nucleic acid isolation of up to eight samples right at your bench.

Purification options as diverse as your nucleic acid research

Different applications and sample types require different nucleic acid purification methods. The MagNA Pure Compact System incorporates a variety of experimental protocols using different specimen (100–1000 μ l) and elution (50–200 μ l) volumes from a wide variety of sample materials (*e.g.*, blood, tissue, or cultured cells).

Proven purification technology

The MagNA Pure Compact Instrument uses a proven magnetic-bead technology (Figure 2) successfully used throughout the world in many publications.



▲ Figure 2: Schematic of nucleic acid purification using the MagNA Pure Compact Instrument.

Convenience and automation – everything ready to go

Purify high quality nucleic acids with minimum effort. Save time using MagNA Pure Compact Instrument integration from the beginning to the end. Experimental setup is easy and requires a minimum handling time. Intuitive, software-guided setup, prefilled sealed Reagent Cartridges and disposables, guarantee excellent performance. Ready-to-use protocols for all available applications are stored onboard.

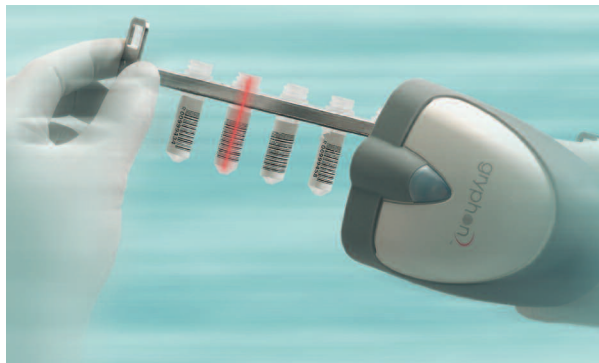
The MagNA Pure Compact nucleic acid purification kits contain all reagents and disposables needed for 32 nucleic acid isolation reactions. The disposable configuration eliminates reagent pipetting, single tip loading, and piercing tool cleaning, thus minimizing waste (Figure 3).



▲ **Figure 3: Reagent Cartridge and accessories.** Single-sample reagents and disposables are prefilled sealed Reagent Cartridges. An individually-packaged Tip Tray and disposable piercing tool for opening cartridge seals are also provided.

Intuitive design ensures sample safety

The MagNA Pure Compact System has a variety of intuitive features for eliminating cross-contamination assuring maximum of safety throughout the purification workflow. Quickly and easily track samples and reagents with the integrated barcode scanner and pre-labeled Reagent Cartridges and Elution Tubes (Figure 4). Protect each sample with the instrument's synchronized stage movement, integrated HEPA filter, UV decontamination, and pre-filled and sealed reagents and disposables. Ensure isolation success with the instrument's sensor for tip loss, clot, and cartridge detection (Figure 5). Isolation protocols for blood and plasma automate pipetting of an internal control, to prevent its degradation by extracellular nucleases.



▲ **Figure 4: Barcode scanning of an Elution Tube in the Elution Tube Rack.** In addition to the Reagent Cartridge, each Elution Tube is labeled with a unique barcode that is unambiguously identified and tracked throughout the remaining processing steps.



▲ **Figure 5: Pipetting station and nozzle head.** During the isolation process, a stepper motor moves the cartridge stage holding the Reagent Cartridges and the Sample and Elution tubes. An eight-nozzle pipetting head processes the samples, from piercing the sealing foil on the cartridge to the final nucleic acid elution. A pressure sensor integrated into the nozzle head detects accidental clotting or tip loss during sample processing.

MagNA Pure Compact Software

Integrated and intuitive, at your fingertips

Navigate with touchscreen-driven software

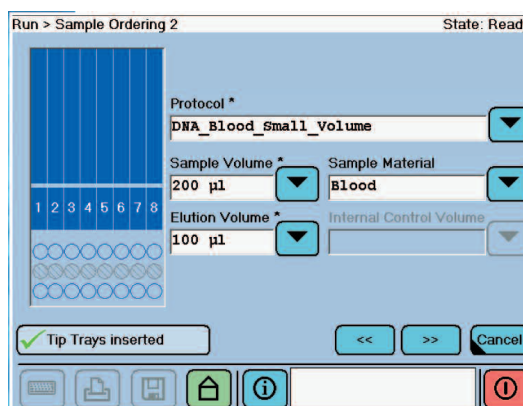
The MagNA Pure Compact Software is controlled by an integrated computer, and navigated by a touchscreen monitor (Figure 6), guiding the user through the setup and run (Figure 8). Preinstalled isolation protocols are selected by scanning the barcode on the kit's Reagent Cartridges (Figure 7). State-of-the-art user management and host connectivity (ASTM/RS232) complete the comprehensive features of the streamlined software for automated nucleic acid purification.



▲ **Figure 6: Touchscreen monitor.** The MagNA Pure Compact Instrument features a touchscreen monitor, integrated computer, and a barcode scanner for sample tracking. All available isolation protocols are preinstalled and can be selected by scanning the Reagent Cartridges' barcodes. The user is guided through setup and run. State-of-the-art user management and host connectivity (ASTM/RS232) compatibility complete the comprehensive features.



▲ **Figure 7: Kit information in the Reagent Cartridge barcode.** Each kit's Reagent Cartridges are labeled with a barcode with information about kit name, lot, and expiration date. Based on this information, the MagNA Pure Compact software selects appropriate protocols and notifies the user if the kit is expired. All barcode data are automatically saved by the system.



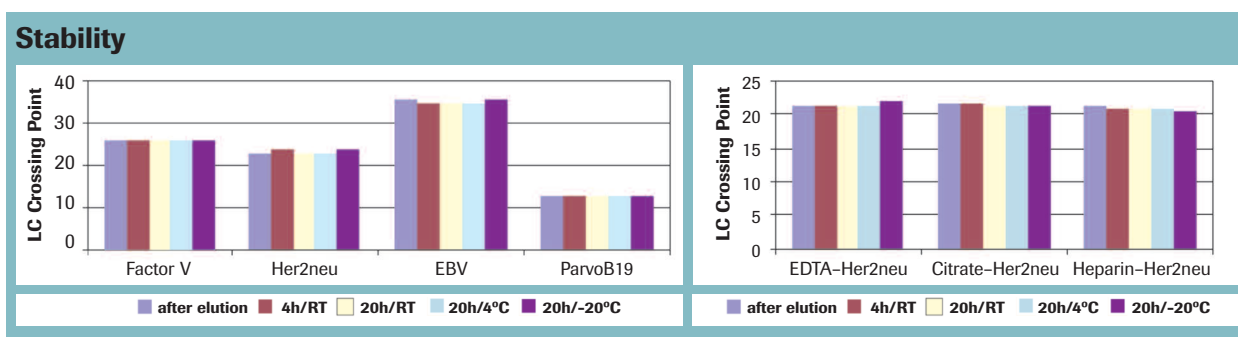
▲ **Figure 8: Sample Ordering Screen.** Pull-down menus allow the user to select appropriate parameters for sample and elution volume and sample material. Protocol selection may also be done by barcode scanning of the kit's Reagent Cartridges.

MagNA Pure Compact

Reagent kit selection guide

Product	Cat. No.	Research Sample Type					
		Whole Blood	Blood Cells (WBCs, PBMCs)	Cultured Cells	Tissue	Serum, Plasma	Body Fluids*, Bacterial Cultures
MagNA Pure Compact Nucleic Acid Isolation Kit I	03 730 964 001	Genomic DNA				Viral Nucleic Acids	Bacterial DNA
MagNA Pure Compact Nucleic Acid Isolation Kit I – Large Volume	03 730 972 001	Genomic DNA				Viral Nucleic Acids	
MagNA Pure Compact RNA Isolation Kit	04 802 993 001	Total RNA					

* e.g., BAL (bronchoalveolar lavage), sputum, cerebrospinal fluid, urine, swabs.



▲ **Figure 9: PCR detection of different human targets in research samples using the LightCycler® Carousel-Based System.** DNA eluates from whole blood samples were generated with the MagNA Pure Compact System, split immediately after elution, and stored at different conditions. PCR was performed using two parameters which detect internal sequences (Factor V and Her2neu), and two parameters which detect spiked sequences using the internal control function of the MagNA Pure Compact Instrument (Epstein-Barr Virus and Parvovirus B19). No significant influence of different storage conditions on amplification performance was observed.

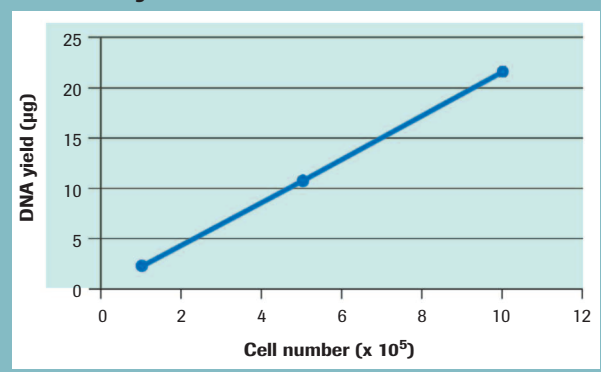
▲ **Figure 10: PCR detection of Her2neu sequences using the LightCycler® Carousel-Based System.** DNA was isolated from human whole blood research samples stabilized with different anticoagulants using the MagNA Pure Compact System. The endogenous sequence Her2neu was detected using the LightCycler® Carousel-Based Real-Time PCR System. Eluate stability at different conditions was demonstrated. No significant deviation in LightCycler® crossing points is observed using either anticoagulants or different storage conditions.

MagNA Pure Compact Reagent Kits

Kit specifications and results

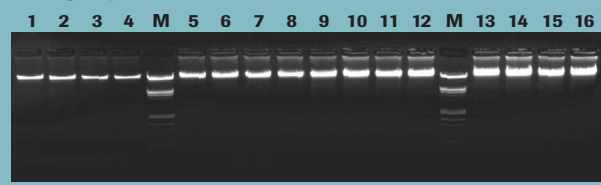
MagNA Pure Compact Nucleic Acid Isolation Kit I		Cat. No. 03 730 964 001
Sample types	Mammalian whole blood, buffy coat, serum, plasma, cultured cells, bacterial cultures, body fluids	
Sample amount	100 µl, 200 µl, 300 µl, 400 µl serum, plasma, or whole blood (with up to 2×10^6 blood cells), up to 1×10^6 cultured cells, and 200 µl bacterial cultures or body fluids	
Eluate volumes	50 µl, 100 µl, or 200 µl; dependent on protocol type	
Type of nucleic acid purified	Genomic DNA from whole blood or cultured cells; total nucleic acid from serum or plasma	
Yield	Typical DNA yield from whole blood (100 µl to 400 µl sample volume): 5 - 15 µg Typical DNA yield from cultured cells (100 µl K-562, containing 1×10^6 cells): approximately 20 µg	
Internal control	Isolation protocols for blood and plasma allow you to choose automated pipetting of an internal control	

Scalability



▲ **Figure 11: Scalability of DNA yield.** Different amounts of K-562 tissue culture cells were used to isolate DNA using the MagNA Pure Compact Nucleic Acid Isolation Kit I. In the range from 1×10^5 to 1×10^6 cells, DNA yield (determined by OD measurement) perfectly matches the number of cells that were processed by the MagNA Pure Compact Instrument.

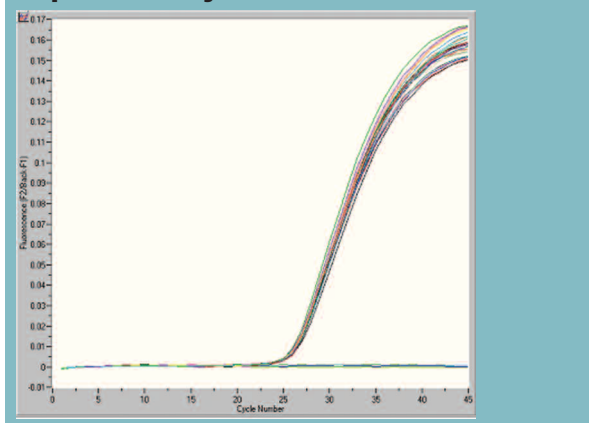
Integrity



▲ **Figure 12: Integrity of DNA isolated from different volumes of EDTA-stabilized whole blood using the MagNA Pure Compact Nucleic Acid Isolation Kit I.**

Lanes 1-4: 100 µl sample volume/100 µl elution volume;
Lanes 5-8: 200 µl sample volume/100 µl elution volume;
Lanes 9-12: 300 µl sample volume/100 µl elution volume;
Lanes 13-16: 400 µl sample volume/100 µl elution volume;
M: Roche DNA Molecular Weight Marker III (Cat. No. 10 528 552 001).

Reproducibility



▲ **Figure 13: Reproducibility in analysis using the LightCycler® Carousel-Based System.** Twenty-four plasma samples were spiked with Parvovirus B19 (10^5 copies/ml). Nucleic acids were isolated from 400 µl of the spiked plasma samples using two different MagNA Pure Compact Instruments and the MagNA Pure Compact Nucleic Acid Isolation Kit I. Samples were eluted in 50 µl elution buffer and the eluates were analyzed for the presence of Parvovirus DNA with the LightCycler® Carousel-Based System. The results show the excellent reproducibility of the isolation procedure.

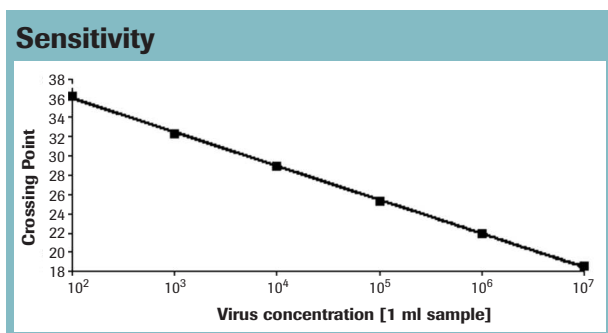
MagNA Pure Compact Reagent Kits

Kit specifications and results

MagNA Pure Compact Nucleic Acid Isolation Kit I – Large Volume		Cat. No. 03 730 972 001
Sample types	Mammalian whole blood, cultured cells, plasma	
Sample amount	500 µl and 1000 µl plasma or whole blood (with up to 1×10^7 blood cells); 1×10^6 to 2×10^6 cultured cells	
Eluate volumes	50 µl, 100 µl, or 200 µl	
Type of nucleic acid purified	Genomic DNA from whole blood or cultured cells; total nucleic acid from serum or plasma	
Yield	Typical DNA yield for whole blood (500 µl or 1000 µl sample volume): 15 – 28 µg Typical DNA yield for cultured cells (100 µl K-562 containing 2×10^6 cells): 40 – 50 µg	
Internal control	Isolation protocols for blood and plasma allow you to choose automated pipetting of an internal control	



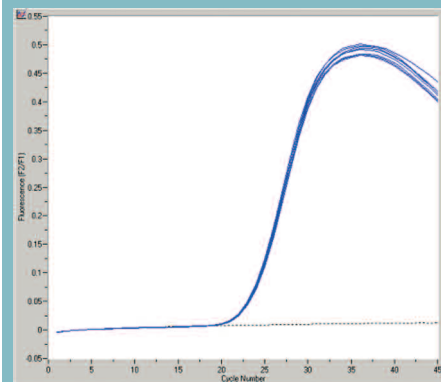
▲ **Figure 14: Integrity of DNA isolated from different volumes of EDTA-stabilized whole blood with the MagNA Pure Compact Nucleic Acid Isolation Kit I – Large Volume.** DNA was isolated from 500 and 1000 µl of EDTA-stabilized whole blood, each in an elution volume of 200 µl. Sixteen microliters of each sample eluate was analyzed on a 0.8% agarose gel and compared to Molecular Weight Marker III (Roche Applied Science Cat. No. 10 528 552 001).



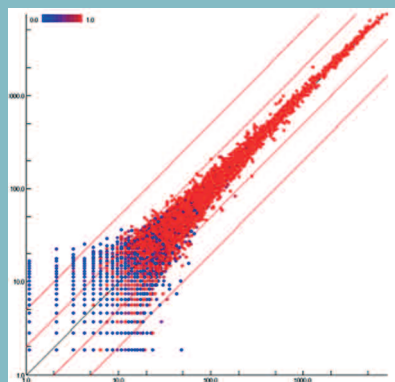
▲ **Figure 15: Citrated plasma was spiked with a dilution series of human Parvovirus B19 in the range of 10^2 to 10^7 copies per ml of plasma (this virus is of significance in the quality control of the plasma processing industry).** Nucleic acids were isolated from 1000 µl of spiked plasma using the MagNA Pure Compact Nucleic Acid Isolation Kit I – Large Volume, with an elution volume of 100 µl. Five microliters of eluate was used for PCR analysis with the LightCycler® Carousel-Based System (corresponding to 5 copies to 5×10^6 copies per PCR, assuming a 100% recovery). As little as 500 copies/ml (= 5 copies per PCR) are detected, showing excellent sensitivity and linearity.

MagNA Pure Compact RNA Isolation Kit		Cat. No. 04 802 993 001
Sample types	Mammalian tissue, cultured cells, whole blood, blood cells	
Sample amount	2.5 - 10 mg tissue; 1×10^3 - 1×10^6 cultured cells; 50 - 200 μ l whole blood (with up to 1.4×10^6 blood cells); 1×10^6 blood cells	
Eluate volumes	50 μ l or 100 μ l	
Type of nucleic acid purified	Total RNA	
Yield	Typical RNA yield for mouse liver (5 mg or 10 mg): 15 - 50 μ g Typical RNA yield for whole blood (200 μ l): 0.7 - 1 μ g Typical RNA yield for cultured cells (1×10^6 HeLa cells): 7 - 15 μ g	

Reproducibility

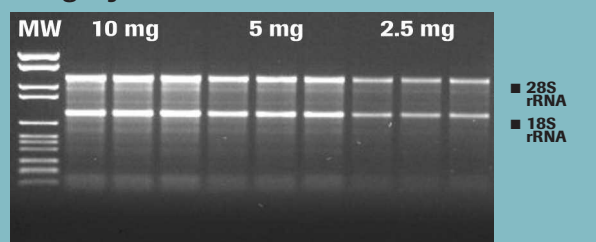


▲ **Figure 16: LightCycler® RT-PCR analysis of RNA isolated with the MagNA Pure Compact RNA Isolation Kit.** RNA was isolated from 200 μ l whole blood in eight replicates, each in an elution volume of 50 μ l. Five microliters of each sample was analyzed by RT-PCR on the LightCycler® Carousel-Based System using Cyclophilin A-specific primers and HybProbe probes. The results show the excellent reproducibility of the isolation procedure. No signs of PCR inhibition were observed.



▲ **Figure 17: Affymetrix GeneChip Analysis of RNA from two independent isolations with the MagNA Pure Compact RNA Isolation Kit.** RNA was isolated from 1×10^6 K-562 cells in two independent isolation runs and analyzed on an Affymetrix GeneChip HG-U133 Plus 2.0. The log intensity scatter plot shows highly reproducible results with an r^2 value of 0.995.

Integrity



◀ **Figure 18: MagNA Pure Compact RNA Isolation Kit, RNA integrity and scalability.** Total RNA was isolated from 10, 5, and 2.5 mg of mouse liver in triplicate, each in an elution volume of 100 μ l. The integrity of the RNA was shown by subjecting 2.5 μ l of each eluate to agarose gel electrophoresis and comparison to Molecular Weight Marker VI (Roche Applied Science Cat. No. 11 062 590 001). All samples show intact 28S and 18S rRNA bands. The resulting band intensities confirm the excellent scalability of the isolation procedure.

The MagNA Pure Compact System

The integrated solution for genomic research

Add the following Roche instruments to your genomics workflow to meet your demanding research needs:

MagNA Lyser Instrument – Automated tissue homogenization

MagNA Pure LC 2.0 System – Nucleic acid isolation and reaction setup in a 32-well format

MagNA Pure 96 System – Nucleic acid purification with real high throughput, up to 96 samples in less than one hour

For additional information, visit www.roche-applied-science.com

The MagNA Lyser Instrument –

Simplify labor-intensive sample preparation



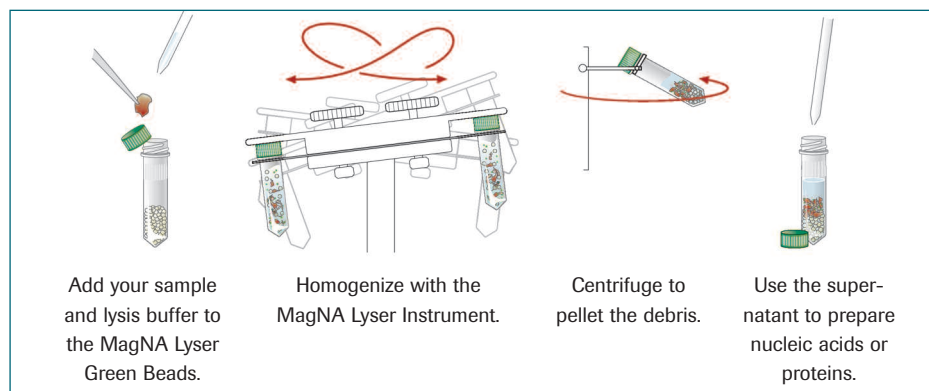
Use the MagNA Lyser Instrument to easily homogenize your samples. This unique and automated instrument is the ideal companion to the **MagNA Pure Compact Instrument**. Homogenize up to 16 samples in just

a few minutes and then proceed to your automated nucleic acid purification.

MagNA Lyser Instrument

Specifications **Cat. No. 03 358 976 001** (230 Volt)
 Cat. No. 03 358 968 001 (110 Volt)

Dimensions	W 305 mm x D 381 mm x H 280 mm W 12 in x D 15 in x H 11 in
Weight	19.8 kg (44 lbs)
Capacity	Rotor with 1 – 16 positions
Rotor	Quick-release rotor
Power Source	AC 110 to 240 V
Power Usage	Max. 1 kW



▲ **Figure 19: MagNA Lyser Workflow**



▲ **Figure 20: MagNA Lyser Green Beads**

Ordering Information

Product	Cat. No.	Pack Size	Application Range
MagNA Pure Compact Instrument	03 731 146 001	1 instrument including internal PC with touch-screen monitor and bar-code scanner	Automated nucleic acid isolation for a broad range of applications
MagNA Pure Compact Nucleic Acid Isolation Kit I	03 730 964 001	1 kit (32 isolations) including all required plastic disposables	<ul style="list-style-type: none"> • Genomic DNA from mammalian whole blood or cultured cells • Viral nucleic acids from plasma or serum • Sample volume range 100 µl – 400 µl
MagNA Pure Compact Nucleic Acid Isolation Kit I – Large Volume	03 730 972 001	1 kit (32 isolations) including all required plastic disposables	<ul style="list-style-type: none"> • Genomic DNA from mammalian whole blood or cultured cells • Viral nucleic acids from plasma or serum • Sample volume range 500 µl – 1000 µl
MagNA Pure Compact RNA Isolation Kit	04 802 993 001	1 kit (32 isolations) including all required plastic disposables	<ul style="list-style-type: none"> • RNA from mammalian tissue, blood, cultured cells, and blood cells • Sample amount up to 10 mg
MagNA Pure Bacteria Lysis Buffer	04 659 180 001	20 ml	<ul style="list-style-type: none"> • DNA from bacteria in many different sample types, such as urine, BAL (bronchoalveolar lavage), sputum, CSF, swabs, or bacterial cultures

Additional Products for the MagNA Pure Compact System

Product	Cat. No.	Pack Size
MagNA Pure Compact Tip Tray Kit	03 753 166 001	10 tip trays
MagNA Pure Compact Waste Tank	03 788 300 001	1 waste tank
MagNA Pure Compact Tube Rack	03 788 296 001	1 tube rack
MagNA Pure Compact Elution Tube Rack	03 788 288 001	1 tube rack
MagNA Pure Compact Drip Tray	04 347 005 001	1 drip tray
MagNA Pure Compact Cartridge Rack	03 788 237 001	1 cartridge rack
MagNA Pure Compact Drop Catcher	03 788 270 001	1 drop catcher

Additional Products

Product	Cat. No.	Pack Size
MagNA Lyser Instrument	03 358 976 001	1 instrument (230 Volt) plus 2 rotors, 1 rotor stand, and 1 cooling block
	03 358 968 001	1 instrument (110 Volt) plus 2 rotors, 1 rotor stand, and 1 cooling block
MagNA Lyser Green Beads	03 358 941 001	100 tubes, prefilled with ceramic beads
MagNA Pure LC 2.0 Instrument	05 197 686 001	1 instrument plus related products, data station and touchscreen integrated
MagNA Pure 96 Instrument	05 195 322 001	1 instrument, control unit, software, and accessories
LC Carousel Centrifuge 2.0	03 709 582 001	1 instrument (230 Volt)
	03 709 507 001	1 instrument (110 Volt)
LightCycler® 2.0 Instrument	03 531 414 201	1 instrument plus related products and data station (desktop or notebook version)
LightCycler® 480 Instrument II	05 015 278 001	1 instrument (96 well)
	05 015 243 001	1 instrument (384 well)

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