IVD CE

Roche

MagNA Pure 96 DNA and Viral NA Small Volume Kit

Version 10

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Prefilled reagents for the MagNA Pure 96 Instrument used for the isolation of genomic DNA and viral nucleic acids (NA) from up to 200 µl whole blood, plasma or serum, from up to 5 mg fresh-frozen tissue, or from 1 – 10 µm sections from formalin-fixed, paraffin-embedded tissue, and from up to 5 × 10^5 cultured cells, as well as for isolation of bacterial, fungal, and viral nucleic acids from up to 200 µl human sample material.

REF **06 543 588 001** Kit for up to 3 x 192 isolations

Store at +15 to +25°C

⚠ Keep the kit away from light.

⚠ Keep the kit away from magnets.

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1. INTENDED USE

The MagNA Pure 96 System is an automated nucleic acid purification system consisting of the MagNA Pure 96 Instrument, software, control unit, consumables, and reagents. The MagNA Pure 96 System is intended for use by professional users for the purification of nucleic acids from biological samples for *in vitro* diagnostic purposes.

MagNA Pure 96 DNA and Viral NA Small Volume Kit is for use with the MagNA Pure 96 System.

2. EXPLANATION OF THE KIT

The MagNA Pure 96 DNA and Viral NA Small Volume Kit is specifically designed to isolate:

- Nucleic acid from up to 200 µl whole blood, plasma, or serum.
- Bacterial, fungal, and viral nucleic acid from 200 µl sample material or lysate of human origin.
- Nucleic acid from up to 5×10^5 cultured cells.
- Nucleic acid from up to 5 mg fresh-frozen tissue, or from 1 – 10 µm sections from formalin-fixed, paraffin-embedded tissue, depending on the pretreament used.

The isolated nucleic acids meet the quality standards required for highly sensitive quantitative PCR/RT-PCR analysis and next-generation sequencing.

3. PRINCIPLE/SUMMARY

The nucleic acid isolation procedure is based on the MagNA Pure Magnetic Glass Particle (MGP) Technology.

The key steps of a MagNA Pure 96 NA isolation procedure are:

1. Sample material is lysed, nucleic acids are released, and nucleases are denatured.
2. Nucleic acids bind to the silica surface of the added MGPs due to the chaotropic salt conditions and the high ionic strength of the lysis/binding buffer.
3. MGPs with bound nucleic acids are magnetically separated from the residual lysed sample.
4. Unbound substances, such as proteins, cell debris, and PCR inhibitors are removed by several washing steps.
5. Purified nucleic acids are eluted from the MGPs.

4. REAGENTS - WORKING SOLUTIONS

4.1 Number of Tests

The kit is designed to perform 3 × 192 isolations.

4.2 Kit/Contents

Component	Label	Contents/Function
Tray 1	**Reagent Tray 1**	**3 trays per kit**
Container 1	Wash Buffer I	▪ 160 ml ▪ < 6 M Guanidine hydrochloride, < 50 % EtOH, < 30 mM Tris HCl ▪ for removing impurities
Container 2	Wash Buffer I	▪ 80 ml ▪ < 6 M Guanidine hydrochloride, < 50 % EtOH, < 30 mM Tris HCl ▪ for removing impurities
Container 3	Lysis/Binding Buffer	▪ 80 ml ▪ < 6 M Guanidine thiocyanate, < 30 % Triton X-100, < 60 mM Tris HCl ▪ for cell/virus lysis and binding of nucleic acids
Tray 2	**Reagent Tray 2**	**3 trays per kit**
Container 1		empty
Container 2	Proteinase K	▪ 15 ml ▪ 2 % Proteinase K, 50 % Glycerol ▪ for digestion of proteins
Container 3	Elution Buffer	▪ 80 ml ▪ < 60 mM Tris-HCl buffer ▪ for elution of nucleic acid
Container 4	Wash Buffer III	▪ 160 ml ▪ < 20 mM Na-acetate buffer ▪ for removing impurities
Bottle 1	Magnetic Glass Particles	▪ 6 bottles, 18 ml each ▪ MGP suspension containing isopropanol (brownish to black solution) ▪ for binding nucleic acids

The MagNA Pure 96 System Fluid (Internal/External) serves as Wash Buffer II for this kit.

All kit components are ready-to-use.

5. PRECAUTIONS AND WARNINGS

5.1 Precautions

⚠ Several buffers in the MagNA Pure 96 DNA and Viral NA Small Volume Kit contain dangerous or hazardous compounds. For detailed information, see Figure 1 (Reagent Tray 1), Figure 2 (Reagent Tray 2), and Table 1. Do not allow these reagents to touch the skin, eyes, or mucous membranes. If contact does occur, wash the affected area immediately with large amounts of water. If the reagents are spilled, dilute the spill with water before wiping it up.

⚠ Do not allow reagents containing guanidine thiocyanate to contact sodium hypochlorite (bleach) solution or acids. These mixtures produce a highly toxic gas. This precaution is particularly important to be aware of when cleaning the MagNA Pure 96 Waste Cover.

Fig. 1: Example of a product image – Reagent Tray 1

Fig. 2: Example of a product image – Reagent Tray 2

Component	Label	Dangerous and Hazardous Compounds
Tray 1	**Reagent Tray 1**	
Container 1	Wash Buffer I	▪ guanidine hydrochloride ▪ ethanol
Container 2	Wash Buffer I	▪ guanidine hydrochloride ▪ ethanol
Container 3	Lysis/Binding Buffer	▪ guanidine thiocyanate
Tray 2	**Reagent Tray 2**	
Container 1	Empty	
Container 2	Proteinase K	▪ proteinase K
Container 3	Elution Buffer	
Container 4	Wash Buffer III	
Bottle 1	Magnetic Glass Particles	▪ isopropanol

Table 1: Reagent listing of dangerous and hazardous compounds

5.2 Handling Requirements

- Wear disposable gloves and change them frequently.
- Do not use the kit after its expiration date.

In addition, to minimize the risk of carryover contamination which may cause false positive results, follow these guidelines:

- Perform sample preparation, PCR/RT-PCR setup, and PCR/RT-PCR in separate locations.
- Discard pipette tips in sealed containers to prevent airborne contamination.

Nuclease-contaminated reagents and reaction vessels will degrade template NA. Follow these guidelines to minimize the risk of contamination:

- Avoid touching surfaces or materials that could cause nuclease carryover.
- Use only reagents provided in this kit. Substitutions may introduce nucleases.
- Clean and decontaminate work areas and instruments, including pipettes, with commercially available decontamination reagents.
- Use only new nuclease-free aerosol-blocking pipette tips and microcentrifuge tubes.
- Use a work area specifically designated for RNA work. If possible, use reaction vessels and pipettors dedicated only for work with template RNA.

5.3 Laboratory Procedures

- All human sourced material and all resulting waste should be considered potentially infectious. Thoroughly clean and disinfect all work surfaces with disinfectants recommended by the local authorities.
- As the sensitivity and titer of potential pathogens in the sample material can vary, the operator must optimize pathogen inactivation and follow the appropriate measures according to local safety regulations.
- Do not eat, drink, or smoke in the laboratory work area.
- Do not pipet by mouth.
- Wear protective disposable gloves, laboratory coats, and eye protection when handling specimens and kit reagents.
- Avoid microbial and nuclease contamination of reagents when removing aliquots from reagent bottles. Use sterile disposable pipette tips.
- Wash hands thoroughly after handling specimens and kit reagents.

5.4 Waste Handling

- Safety Data Sheets (SDS) are available online at www.dialog.roche.com, or upon request from the local Roche office.
- Discard unused reagents and waste in accordance with country, federal, state, and local regulations.
- Wear protective disposable gloves, laboratory coats, and eye protection when discarding samples and kit reagents.
- To discard the reagents from the containers, follow the procedure below:
  1. Pierce the foil in the corner of one container in the reagent tray with a solid plastic disposable, such as a serological pipette.
  2. Fold back the foil and discard the liquid into a designated waste container.
  3. Repeat steps 1 and 2 until all containers are empty.

5.5 For customers in the European Economic Area

Contains SVHC: octyl/nonylphenol ethoxylates. For use as part of an IVD method and under controlled conditions only – acc. to Art. 56.3 and 3.23 REACH Regulation.

6. STORAGE AND STABILITY

6.1 Kit and Reagents

- The kit is shipped at ambient temperature.
- The kit components are stable at +15 to +25°C until the expiration date printed on the label.

⚠ Keep the kit away from light and away from magnets.

- Reagents can be stored for 32 hours at +15 to +25°C on the stage of the MagNA Pure 96 Instrument.
- One set of reagents (Tray 1, Tray 2 and MGP bottles) can be used for up to eight individual runs. Once opened, the reagents can be used for additional runs on the same MagNA Pure 96 Instrument within 28 days, with proper sealing using a MagNA Pure Sealing Foil. In this case store all reagents at +2 to +8°C. Equilibrate the kit components at +15 to +25°C for one hour before use.

⚠ It is only possible to reuse partially used reagents on the same MagNA Pure 96 Instrument. The MagNA Pure 96 Software for each instrument tracks inventory using reagent barcodes, and recognizes partially used reagents and tip trays, handling them appropriately in the next run.

⚠ When reagent trays are not properly sealed, evaporation may occur. Inappropriate storage conditions can negatively impact the performance of the isolation process.

6.2 Specimen Collection and Storage of Sample Material

For sensitive nucleic acid detection, it is important to ensure proper storage of the samples (-15 to -25°C for DNA or -60 to -80°C for RNA). DNA or RNA may be degraded if the samples are not stored appropriately.

⚠ Do not use plasma or blood containing heparin, since this can negatively impact the performance of the downstream PCR.

⚠ Do not use sample material that has been stored extensively at higher temperatures.

⚠ If samples were stored frozen, thaw under slight agitation using, for example, a laboratory roller.

⚠ Do not store sample material in sealed MagNA Pure 96 Processing Cartridges.

6.3 Storage of Purified Nucleic Acids and Eluates

To ensure greatest possible stability of the eluted nucleic acid, proceed immediately with PCR/RT-PCR setup. Do not store the eluted nucleic acid on the MagNA Pure 96 stage.

For storage, close the output plate with a MagNA Pure Sealing Foil and store at -15 to -25°C for DNA or -60 to -80°C for RNA. Store the purified nucleic acid in aliquots to avoid repeated freezing and thawing.

When storing output plates containing eluates outside the MagNA Pure 96 Instrument, seal the plates with a MagNA Pure Sealing Foil.

⚠ For further processing, the sealing foil must be removed. Do not remove the sealing foil too abruptly, as this may lead to cross-contamination by creating aerosols and carryover from well to well.

⚠ If eluates were stored frozen, mix gently after thawing by pipetting up and down ten times before performing any downstream steps, such as PCR/RT-PCR or OD measurements. The mixing volume should be at least half of the eluate volume. When nucleic acids are not premixed and distributed evenly/homogenously in solution, results may not be reproducible in subsequent assays.

For long-term storage, we recommend transferring eluates to an archive plate.

7. MATERIALS

7.1 Materials Provided

See Section 4: Reagents - Working Solutions

7.2 Materials and Devices Required but Not Provided

- MagNA Pure 96 Instrument (Cat. No. 06 541 089 001)
- MagNA Pure 96 System Fluid (Internal) (Cat. No. 06 430 112 001)
- MagNA Pure 96 System Fluid (External) (Cat. No. 06 640 729 001)
- MagNA Pure Tip 1000 µL (Cat. No. 06 241 620 001)
- MagNA Pure 96 Processing Cartridge (Cat. No. 06 241 603 001)
- MagNA Pure 96 Output Plate (Cat. No. 06 241 611 001)
- MagNA Pure 96 Internal Control Tube (Cat. No. 06 374 905 001)
- MagNA Pure Sealing Foil (Cat. No. 06 241 638 001)
- Optional reagents:
  - MagNA Pure External Lysis Buffer (Cat. No. 06 374 913 001)
  - MagNA Pure Bacterial Lysis Buffer (for the isolation of bacterial, fungal, and viral nucleic acid using the Pathogen Universal Protocol, if external lysis is required) (Cat. No. 06 374 921 001)
  - MagNA Pure DNA Tissue Lysis Buffer (Cat. No. 06 640 702 001)
  - Proteinase K, PCR grade, Activity (+37°C) ≥ 0.6 U/µl (*e.g.,* Cat. No. 03 115 828 001)
  - Xylol, for FFPE tissue applications
  - Ethanol, for FFPE tissue applications
  - S.T.A.R. Buffer (Stool Transport and Recovery buffer for stabilization, transport, and recovery of Nucleic Acid in stool specimens) (Cat. No. 03 335 208 001)
  - MagNA Pure FFPET Buffer Set (for deparaffinization and lysis of formalin-fixed, paraffin embedded tissue) (Cat. No. 08 447 144 001)
- Optional, MagNA Lyser Instrument (Cat. No. 003 358 968 001 as of SN 40467540, Cat. No. 03 358 976 001 as of SN 40405218)
- Optional, MagNA Lyser Green Beads (Cat. No. 03 358 941 001)
- Standard laboratory equipment
  - Pipettes and nuclease-free, aerosol-preventive tips, such as extra-long tips of 10 cm length, to pre-dispense samples into the MagNA Pure 96 Processing Cartridge.
  - Optional, centrifuge for tubes.

8. ASSAY PROCEDURES

8.1 Purification Protocols

Different MagNA Pure 96 Instrument purification protocols are available for nucleic acid isolations with the MagNA Pure 96 DNA and Viral NA Small Volume Kit. Each protocol is optimized for specific sample materials.

⚠ Run protocols only with specified sample materials, otherwise the performance of the isolation process and the downstream applications may be negatively affected. Improper use may lead to clumping and loss of MGPs, cross-contamination of samples, or even damage to the instrument. Only the specified types of sample material can be combined in the same run.

For *in vitro* diagnostic purposes, the following protocols can be used with the MagNA Pure 96 DNA and Viral NA Small Volume Kit. For each protocol, the sample volume and the elution volume can be chosen from the software menu.

Protocol Name	Sample Material	Elution Volume[1)]
DNA Blood SV	50[3)], 100[3)], or 200 µl whole blood ⚠ Do not use more than 2×10^6 blood cells/sample.	50 or 100 µl 🔍 Recommended for elution of predominantly double-stranded DNA.
DNA Blood ext lys SV	300, 350, or 450 µl lysate (from 50, 100, or 200 µl whole blood)	50 or 100 µl
Viral NA Plasma SV	50[3)], 100[3)], or 200 µl EDTA plasma	50 or 100 µl
Viral NA Plasma ext lys SV	350 or 450 µl lysate (from 100 or 200 µl plasma, serum, or whole blood)	50 or 100 µl
Viral NA Universal SV	50[3)], 100[3)], or 200 µl sample (recommended for citrate plasma, serum, or whole blood)	50 or 100 µl
Pathogen Universal[2)] 200	200 µl sample or 200 µl lysate	50 or 100 µl
DNA Cells SV	Up to 5×10^5 cultured cells resuspended in 200 µl PBS	100 µl

DNA Tissue SV	Up to 5 mg homogenized tissue in a volume of 200 µl	100 or 200 µl
DNA FFPE SV	Deparaffinized and digested FFPE tissue sections in a volume of 200 µl	50 or 100 µl

[1)] The concentration of nucleic acid in the eluate, and, therefore, the sensitivity of downstream applications can be increased by choosing a low elution volume. However, the elution efficiency, and the overall nucleic acid yield may be lower compared to that of using a higher elution volume.

[2)] The Pathogen Universal Protocol is designed for the isolation of bacterial, fungal, and viral nucleic acid from many different sample types of human origin. The protocols can be used directly for 200 µl sample material or for 200 µl lysate. Use an elution volume of 50 µl for liquid samples of low cell content, such as urine.

[3)] The Liquid Pressure Sensor checks whether the sample material present in the processing cartridge corresponds to the sample volume programmed in the software. The scan results for sample volumes of 50 µl and 100 µl are not evaluated by the software.

8.2 Sample Materials and Pre-Isolation Steps

To obtain optimal results in downstream procedures, especially in real-time RT-PCR assays, for example, using the LightCycler® Instruments, do not process samples with higher volume than the selected MagNA Pure 96 purification protocol is designed to handle. Doing so will affect the performance of the isolation process, and may lead to clumping and loss of MGPs, cross-contamination of samples, or even damage to the instrument.

⚠ Treat all samples as potentially infectious.

I. Whole blood Fresh or frozen whole blood can be used without any pretreatment.

⚠ If the blood cell count is above 1×10^7 blood cells/ml, dilute the whole blood with PBS prior to use to avoid clumping.

⚠ Ensure that there are no clots in anticoagulated whole blood samples.

II. Plasma/ Serum Fresh or frozen plasma or serum can be used without any pretreatment.

⚠ If precipitates have formed, perform a centrifugation step for 10 min at 1,900 × *g* for 10 ml tubes. Use only the supernatant as sample.

III. Lysates (for external lysis protocols)

Whole blood, plasma, or serum mixed with MagNA Pure External Lysis Buffer.

Ensure that the MagNA Pure External Lysis Buffer is equilibrated to +15 to +25°C before use.

Sample	External Lysis Buffer	Lysed Sample
50 µl	250 µl	300 µl
100 µl	250 µl	350 µl
200 µl	250 µl	450 µl

Add 50, 100, or 200 µl of whole blood, plasma, or serum to 250 µl MagNA Pure External Lysis Buffer and mix by pipetting.

Use 300, 350, or 450 µl lysate directly in combination with the respective external lysis protocol, or store at -15 to -25°C for DNA or -60 to -80°C for RNA until further processing.

When lysates have been stored frozen, thaw on ice. Before transfer to a MagNA Pure 96 Processing Cartridge, mix thoroughly by vortexing three times for 10 s, and spin down briefly.

IV. Various sample materials and lysates for Pathogen Universal 200 Protocol.

Lysis of bacteria in many different sample types of human origin can be performed. The following sample materials may be suitable for the Pathogen Universal 200 protocol: urine, bronchoalveolar lavage (BAL), sputum, cerebrospinal fluid (CSF), swabs, stool, whole blood, plasma, serum, and bacterial cultures.

Due to the great variety of sample materials, no single universally applicable procedure is possible. The preparation steps for a semi-liquid sample (BAL, sputum, stool, *etc.*) for nucleic acid isolation will depend on the type of sample material, sample viscosity, and particle type and content.

Any sample material using this sample preparation procedure in conjunction with any downstream IVD nucleic acid testing must be validated with regard to the individual IVD parameters.

Depending on the sample viscosity and particle type and content, samples may be used without any pretreatment.

Lysis Protocol using MagNA Pure Bacterial Lysis Buffer (BLB)	
①	Liquefaction (optional step for very viscous samples, *e.g.,* BAL or sputum) ▪ Prepare a fresh DTT (dithiothreitol) stock solution (*e.g.,* 5× conc. = 0.75 %). ▪ Adjust final DTT concentration in sample to 0.15 % by adding DTT stock solution. ▪ Incubate sample while shaking at 850 rpm for 30 min at +37°C until it can be easily pipetted.
②	Addition of BLB ▪ Add 100 µl BLB to100 µl sample, and mix thoroughly. If the sample volume is less than 100 µl, add BLB to make a final volume of 200 µl.
③	Proteinase K Digestion ▪ Add 20 µl Proteinase K to 200 µl sample/BLB mixture, and mix thoroughly. ▪ Incubate for 10 min at +65°C.
④	Boiling (for difficult sample materials, such as sputum or stool samples) Perform boiling step to inactivate pathogenic organisms in the sample. This may also enhance lysis of cell walls for some bacterial species. To prevent leakage, perform this step in screw-capped reaction tubes. ▪ Incubate samples at +95°C for 10 min. ⚠ For isolation of RNA omit the boiling step because this could negatively affect the integrity of the RNA. ▪ Chill samples on ice. Then centrifuge briefly to collect the complete sample volume on the bottom of the tube. ▪ Transfer 200 µl to a MagNA Pure 96 Processing Cartridge.

Pretreatment of Stool Samples	
①	Use a pea-sized amount of stool sample and suspend in 550 µl of PBS. To avoid clogging the reaction tips with solid particles centrifuge for 5 s at 500 × *g*. For the isolation of viral RNA, a PBS/STAR Buffer mixture (1:1 mixture) may be used as an alternative to suspend stool samples, in order to reduce possible inhibition.
②	Transfer 100 µl supernatant to a fresh 1.5 ml microcentrifuge tube; add 100 µl BLB and 20 µl Proteinase K.
③	Incubate for 10 min at +65°C while shaking at 850 rpm in a thermomixer, followed by 10 min incubation at +95°C. ⚠ For isolation of RNA omit incubation at +95°C, because this could negatively affect the integrity of the RNA.
④	Transfer 200 µl of the lysate to a MagNA Pure 96 Processing Cartridge.

Pretreatment of Swabs	
①	Suspend a dry swab in 200 µl BLB; add 20 µl Proteinase K. For swabs in transport medium use 100 µl transport medium, add 100 µl BLB and 20 µl Proteinase K.
②	Squeeze and remove the swab.
③	Incubate the liquid sample at +65°C for 10 min, followed by 10 min incubation at +95°C. ⚠ For isolation of RNA omit incubation at +95°C, because this could negatively affect the integrity of the RNA.
④	Transfer 200 µl liquid sample to a MagNA Pure 96 Processing Cartridge.

V. Cultured cells

Cultured cells resuspended in 200 µl phosphate buffered saline (PBS) can be used.

For DNA isolation from cultured cells grown in suspension, gently spin down the cultured cells for 5 min at 300 × *g*. If necessary, wash the cell pellet using PBS.

The cell pellet can be stored at -15 to -25°C.

Remove the culture media (or PBS) and resuspend cells in cold PBS by pipetting or shaking the tube until the cell pellet is resuspended.
Monolayer cultured cells should be collected by standard trypsinization using the procedure described above. The required sample volume is 200 µl.

⚠ Do not use more than 5 × 10^5 cells/200 µl, otherwise the performance of the isolation process will be negatively affected.

VI. Fresh-frozen tissue

Up to 5 mg fresh-frozen tissue sample can be used after homogenization.

For some tissues with a low DNA content, for example, muscle, up to 10 mg tissue can be used.

Tissue Homogenization by Proteinase K Digestion	
①	Add up to 5 mg tissue sample into a reaction tube, such as 1.5 ml centrifuge tube.
②	Add 180 µl MagNA Pure DNA Tissue Lysis Buffer and 20 µl Proteinase K to the tissue sample.
③	Incubate at +55°C until complete dissolution of the tissue (usually three hours to overnight). This homogenization method results in a high DNA yield and integrity.

Tissue Homogenization using MagNA Lyser Instrument	
①	Transfer up to 5 mg tissue sample into a MagNA Lyser Green Beads Tube.
②	Add 200 µl MagNA Pure DNA Tissue Lysis Buffer.
③	Homogenize the tissue in the MagNA Lyser Instrument for 30 to 40 seconds. If homogenization is not yet complete, repeat this step. For more details refer to the Operator's Manual of the MagNA Lyser Instrument. This method is fast, however, due to mechanical shearing, the DNA may be partially fragmented.

VII. FFPE tissue Using the MagNA Pure DNA Tissue Lysis Buffer

Up to 10 µm sections from formalin-fixed, paraffin-embedded tissue can be used.

The yield and quality of the isolated DNA are strongly related to type of tissue, age of sample, and fixation protocol used.

Deparaffinization of FFPE Tissue Sections	
①	Add 800 µl Xylol to one 10 µm FFPE tissue section in a 1.5 ml reaction tube.
②	Incubate for 5 min and mix by overhead shaking.
③	Add 400 µl absolute ethanol and mix. Centrifuge for 2 min at maximum speed and discard supernatant. Add 1 ml absolute ethanol and mix by overhead shaking.
④	Centrifuge for 2 min at maximum speed and discard supernatant.
⑤	Invert the tube and blot briefly on a paper towel to get rid of residual ethanol. Dry the tissue pellet for 10 min at +55°C.
⑥	Add 200 µl MagNA Pure DNA Tissue Lysis Buffer and 20 µl Proteinase K solution, then mix.
⑦	Incubate at +55°C until complete dissolution of the tissue (usually two hours to overnight).
⑧	Use 200 µl tissue lysate for nucleic acid purification using the MagNA Pure 96 Instrument.

VIII. FFPE tissue Using the MagNA Pure FFPET Buffer Set Kit

FFPET sample collection	
①	Add 2 FFPET sections of 5 µm to a 1.5 ml tube. Cap the tube.
②	Centrifuge the tube at 5,000 x *g* for 30 seconds at +15 to +25°C, until samples collect at the bottom of the tubes. Repeat the centrifugation step if necessary.

FFPET deparaffinization	
①	Add 300 µl Deparaffinization Reagent directly to the FFPET sample and cap the tube.
②	Incubate while shaking at 2,000 rpm for 5 minutes at +56°C. Alternatively, incubate for 20 minutes at +56°C without shaking.

Lysis solution preparation

① Prepare the Lysis solution: In an appropriate bottle or tube, premix the Lysis Buffer with Proteinase K:

Lysis Buffer (µl)	Proteinase K (µl)	Lysis solution (µl)
200	20	**220**

All volumes are for one sample.

② According to the number of samples processed, prepare the Lysis solution in bulk. Always add volume for an extra sample, and mix gently by inversion.

⚠ Always prepare Lysis solution freshly before each use.

⚠ Avoid introducing foam or bubbles.

FFPET lysis incubation

① Add 200 µl Lysis solution to 300 µl sample prepared in Step 2.

Ⓢ The Lysis solution migrates to the bottom of the tube and a bilayer forms.

② Incubate the capped tubes at +56°C for 60 minutes.

⚠ Higher tissue input may require additional lysis incubation time.

FFPET reverse crosslinking

① Incubate at +80°C for 30 minutes without shaking.

Nucleic acid purification

① Transfer 200 µl of the FFPET lysate from the bottom of the 1.5 ml tube.

Ⓢ Small amounts of the Deparaffinization Reagent transferred to the sample processing tube or processing cartridge do not affect the purification performance.

② Immediately proceed with the nucleic acid purification.

Ⓢ Partially used reagent bottles from the pretreatment **cannot be** used in automated workflows performed on the MagNA Pure 24 Instrument.

8.3 Quality Control

⚠ The usage of appropriate controls is mandatory.

To control the complete process, starting from sample preparation to analysis, perform the following controls (external controls and an internal control):

- Positive control using a sample material positive for the target.
- Negative control using PBS in place of the sample.
- Extraction control using a sample material negative for the target.
- Internal control (IC) by adding a defined amount of a control template to all samples to be purified.

⚠ For applications that could produce false negative results, such as the detection of pathogens, the use of an appropriate internal control (IC) is mandatory. The IC is added during nucleic acid isolation, preferably using the automated IC function of the MagNA Pure 96 System. The IC can also be added manually to the sample. In this case, the IC must be stable in the sample material, and a nuclease-sensitive IC, such as unprotected RNA, should not be used for this purpose.

Internal Control

The MagNA Pure 96 System is able to automatically add an internal control (IC) to each sample from the MagNA Pure 96 Internal Control Tube. The internal control volume is fixed to 20 µl per isolation. To use this function, select an internal control from the *Internal Control* list, when creating an order. Add the indicated volume of internal control to the IC tube, and position the tube on the stage.

⚠ Due to mechanical limitations, the required internal control volume is higher than simply multiplying the number of samples by 20 µl:

Number of Samples	8	16	24	32	40	48	56	64	72	80	88	96
IC Amount (µl)	650	800	1000	1350	1500	1650	2300	2450	2600	2800	2950	3100

8.4 Isolation Procedure

⚠ The Instrument Check Protocol is used by the Roche Field Service Engineer to check the functionalities of the system after maintenance/repair. No kits are needed during this check. It can also be used for troubleshooting purposes. For further information, contact your Roche representative.

⚠ It is the user's responsibility to validate system performance for any procedures used in the laboratory.

The MagNA Pure 96 Instrument is designed to simultaneously process 96 samples. When sample numbers other than multiples of 8 are used, the instrument will fill up the empty positions until the next multiple of 8 is reached.

For a detailed description of how to perform instrument setup and a purification run, refer to the MagNA Pure 96 User Training Guide (Software Version 3.2).

⚠ To avoid erroneous volume scan results, be sure to pipet samples to the bottom of the wells of the processing cartridge while avoiding foaming and droplets on the wall of the wells. Use the Sample Transfer function to automatically pipet the samples into the wells of another processing cartridge. This will ensure a transfer without the danger of contaminating the walls of the wells with sample materials. For more details, refer to the MagNA Pure 96 Operator's Guide (Software Version 3.2).

⚠ Ensure that the instructions are followed regarding type and amount of sample material (see section 8.2 Sample Materials and Pre-isolation Steps). Using the wrong types and amounts of sample material may cause clumping, which may lead to low yield and purity of nucleic acid, as well as cross-contamination and inhibition of downstream assays, such as PCR and RT-PCR. Aqueous sample material, such as nucleic acids dissolved in water or in liquids without biological buffer, may result in bad purification performance. In this case, we recommend adding 10 × PBS to a final concentration of 1× PBS, or a carrier nucleic acid, such as Poly A RNA.

⚠ When reagents have been stored at temperatures below +15 to +25°C, equilibrate kit components at +15 to +25°C for at least one hour before use.

⚠ Ensure that all containers are inserted correctly into the reagent trays prior to placing them on the stage.

⚠ It is possible to use two reagent sets of the same or different lots, within one purification run. In any case, we recommend using two sets of external controls, one for each reagent set. Using two kits of different lots is only possible when logged in as local administrator.

8.5 Ending a Run

After the run has finished, carefully inspect the instrument for any signs of spillage. If spillage occurred, clean and decontaminate the instrument as described in the MagNA Pure 96 System Operator´s Guide.

⚠ Clean and decontaminate the waste cover after each run, as described in the MagNA Pure 96 System User Training Guide. Do not use sodium hypochlorite (bleach) solution or acids for the first cleaning step, because this may produce highly toxic gas in combination with reagents containing guanidine thiocyanate. In addition perform all maintenance activities as described in the MagNA Pure 96 Operator's Guide.

Residual amounts of magnetic particles in the output plate do not affect PCR and RT-PCR assays on LightCycler® Instruments or conventional thermal block cyclers.

9. LIMITATIONS AND INTERFERENCES

1. Reliable results are dependent on adequate specimen collection, transport, storage, and processing procedures.
2. Use of this product should be limited to personnel trained in nucleic acid purification, isolation, and PCR techniques.
3. False negative results may occur if a specimen is improperly collected, transported, stored, or handled. False negative results may also occur if inadequate numbers of organisms are present in the specimen.
4. Any IVD application using the sample preparation procedure in conjunction with any downstream IVD nucleic acid testing shall be validated with regard to the individual IVD parameters.
5. To minimize the risk of a negative impact on the results, adequate controls for downstream applications must be used.
6. Storage conditions (temperature, time) for lysates, pellets of cultured cells, and eluates, shall be validated with regard to the individual IVD parameter.
7. The MagNA Pure 96 DNA and Viral NA Small Volume Kit and its reagents are intended to be used in combination with the MagNA Pure 96 System for isolation and purification of total nucleic acids (DNA/RNA) from biological specimens for *in vitro* diagnostic purposes. Appropriate performance characteristics have to be established by the user, in particular in conjunction with any downstream application. Any result shall be interpreted within the context of all relevant clinical and laboratory findings. As the analyte concentration can vary broadly amongst different specimen types, we recommend establishing cross-contamination performance, for example, by so-called checkerboard experiments (high positive next to negative samples) before going into routine testing.

10. PERFORMANCE DATA

The MagNA Pure 96 Kits and its reagents are used in combination with the MagNA Pure 96 System for isolation and purification of total nucleic acids (DNA/RNA) from biological specimens for *in vitro* diagnostic purposes.

Representative performance data are shown below. The data show exemplarily the performance of the most common sample materials in order to demonstrate the state of the art performance of the system. As results obtained may differ depending on sample and parameter, appropriate performance characteristics have to be established by the user. For diagnostic purposes the results shall always be assessed in conjunction with the relevant application and other findings.

For sample preparation using the MagNA Pure 96 Instrument, both **the MagNA Pure 96 DNA and Viral NA Small Volume Kit** and the **MagNA Pure 96 DNA and Viral NA Large Volume Kit** were used to produce the performance data shown below.

10.1 Precision of Purification Efficiency

To determine the precision of the purification efficiency, genomic DNA was purified from whole blood. Yield and purity of the isolated nucleic acid were determined by OD measurement. The experimental setup and the results are described below.

Kit Type	MagNA Pure 96 DNA and Viral NA SV Kit
Purification Protocol	DNA Blood SV
Sample Type	Whole blood (7.6×10^6 white blood cells/ml)
Sample Input Volume	200 µl
Elution Volume	100 µl
Replicates per Run	24

Table 2: Experimental setup to perform analysis of yield and purity

	Run 1	Run 2	Run 3
Yield (µg)	5.6	5.6	5.5
CV (%)	3.9	5.5	6.5
OD 260/280	1.9	1.9	1.9
CV (%)	2.5	4.4	1.8

Table 3: Results (mean values) for DNA yield and purity, for genomic DNA purified from whole blood

⚠ Yield strongly depends on the blood cell count and therefore can vary from donor to donor.

10.2 Analytical Performance

Real-time qPCR/RT-PCR was performed on the LightCycler® 480 Instrument using 5 µl eluate in a total PCR volume of 20 µl. Quantification standards and control samples were added directly before starting the PCR.

Parameter	Parvo B19 Virus	Hepatitis A Virus (HAV)	Cyclophilin A (CycA)
Sample Type	EDTA plasma spiked with Parvo B19 virus	EDTA plasma spiked with Hepatitis A virus	Whole blood pooled from different donors (7.6×10^6 white blood cells/ml)
Target	In-house Parvo B19 virus stock material	In-house Hepatitis A virus stock material	Human genomic DNA
Kit used for PCR Analysis	LightCycler® Parvo B19 Quantification Kit (available in-house only)	LightCycler® Hepatitis A Quantification Kit (available in-house only)	LightCycler® CycA in-house assay: LightCycler® FastStart DNA Master^{PLUS} Hyb-Probe and Cyclophilin A specific primers and probes
Eluate Volume per PCR	5 µl	5 µl	5 µl
PCR Volume	20 µl	20 µl	20 µl
PCR Instrument	LightCycler® 480 Instrument	LightCycler® 480 Instrument	LightCycler® 480 Instrument

Table 4: Summary of the assays used to produce the performance data shown below.

Linear Range and Limit of Detection (LoD)

The linear range and the limit of detection (LoD), that can be achieved using the MagNA Pure 96 DNA and Viral Nucleic Acid Kits for automated nucleic acid purification in combination with the MagNA Pure 96 Instrument was evaluated, using virus stock material from Parvo B19 virus and from Hepatitis A virus (both available in-house only).

The experimental setup to determine the linear range and the limit of detection of the chosen parameters and the results are described below.

Parameter	Parvo B 19 Virus	Hepatitis A Virus
Kit Type	MagNA Pure 96 DNA and Viral NA LV Kit	MagNA Pure 96 DNA and Viral NA LV Kit
Purification Protocol	Viral NA Universal LV	Viral NA Universal LV
Sample Type	EDTA plasma	EDTA plasma
Sample Input Volume	500 µl	500 µl
Elution Volume	50 µl	50 µl
Dilution series	8 different virus titers 2×10^{1} to 5×10^{7} copies/ml	8 different virus titers 3×10^{1} to 1×10^{9} copies/ml
Overall data points available	172	176

Table 5: Experimental setup to determine the linear range and LoD.

Parameter	Parvo B 19 Virus	Hepatitis A Virus
Linear Range	2×10^{2} to 5×10^{6} copies/ml	3×10^{3} to 1×10^{9} copies/ml
Limit of Detection* (LoD_95)	68 copies/ml confidence interval: 48 to 156 copies/ml	119 copies/ml confidence interval: 75 to 279 copies/ml

Table 6: Results determined for linear range and LoD.

* All data were statistically evaluated by Probit analysis; LoD was calculated for the 95 % confidence interval (LoD_95).

⚠ Sensitivity and the limit of detection are highly dependent on the PCR assay

Linear Range – Parvo B19 Virus

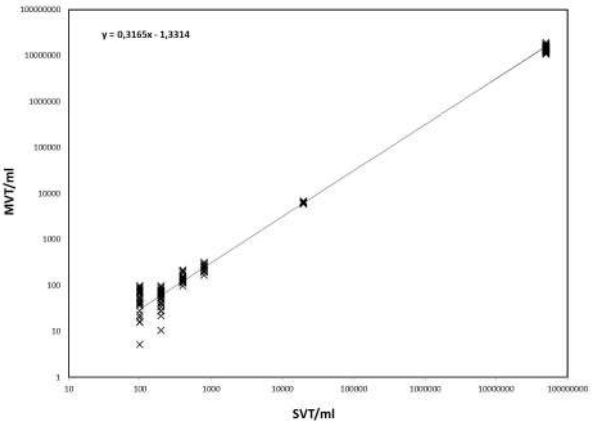

Figure 1: Linear range using the Viral NA Universal LV protocol to purify Parvo B19 virus from EDTA plasma. The linear range for this application is 2×10^2 to 5×10^6 copies/ml.
SVT/ml spiked virus titer/ml, **MVT**/ml: measured virus titer/ml.

Linear Range – Hepatitis A Virus (HAV)

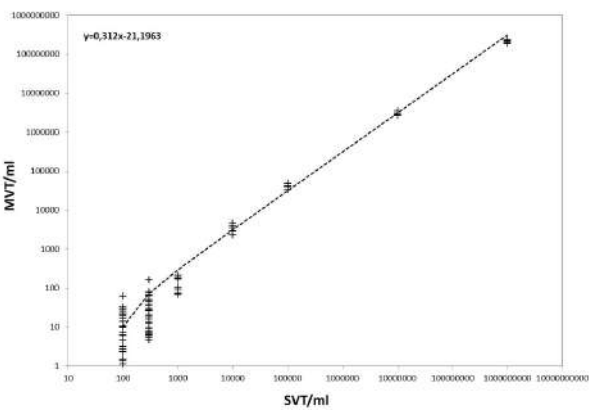

Figure 2: Linear range using the Viral NA Universal LV protocol to purify HAV from EDTA plasma. The linear range for this application is 3×10^3 to 1×10^9 copies/ml.
SVT/ml spiked virus titer/ml, **MVT**/ml: measured virus titer/ml.

Limit of Detection for Parvo B19 Virus

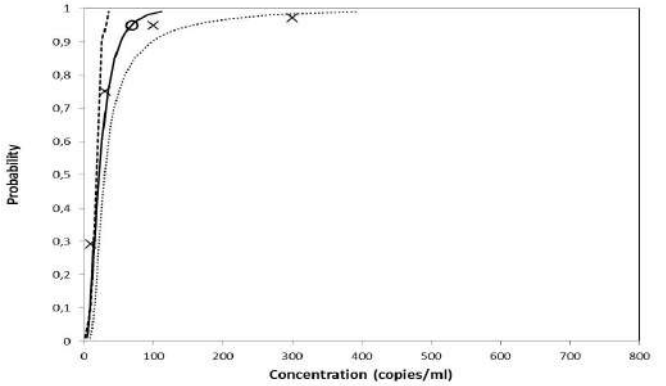

Figure 3: Limit of detection for Parvo B19 virus determined using the Viral NA Universal LV protocol to purify a viral dilution series from EDTA plasma.
The LoD_95 is 68 copies/ml. The related confidence interval is 48 to 156 copies/ml.
—— Probit Regression, - - - - lower 95 % limit, ····· upper 95 % limit, º LoD_95.

Limit of Detection for Hepatitis A Virus (HAV)

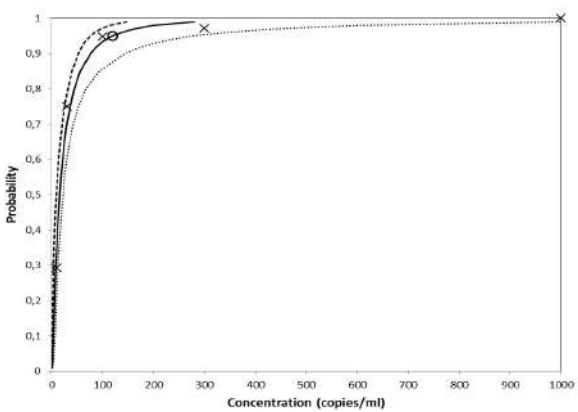

Figure 4: Limit of detection for HAV determined using the Viral NA Universal LV protocol to purify a viral dilution series from EDTA plasma.
The LoD_95 is 119 copies/ml. The related confidence interval is 75 to 279 copies/ ml.
—— Probit Regression, - - - - lower 95 % limit, ····· upper 95 % limit, º LoD_95.

10.3 Precision Analysis

Standard deviations (SD) and coefficients of variations (CVs) were determined for dilution series within the linear range using the following parameters: Parvo B19 virus, Hepatitis A virus and Cyclophilin A.

To determine the intra-assay precision, all data were produced in a single run. To determine the inter-assay precision three runs were performed by different operators, on different instruments, in different labs. Lot-to-lot precision was determined using six different lots.

The experimental setup to perform precision analysis and the corresponding results are described below.

Parameter	Parvo B19 Virus	Hepatitis A Virus (HAV)	Cyclophilin A (CycA)
Kit Type	MagNA Pure 96 DNA and Viral NA SV Kit	MagNA Pure 96 DNA and Viral NA SV Kit	MagNA Pure 96 DNA and Viral NA SV Kit
Purification Protocol(s)	Viral NA Universal SV	Viral NA Universal SV	DNA Blood SV
Sample Type	EDTA plasma	EDTA plasma	Whole blood (7.6×10^6 white blood cells/ml)
Sample Input Volume	200 µl	200 µl	200 µl
Elution Volume	50 µl	50 µl	100 µl
Dilution Series	1×10^3 to 1×10^6 copies/ml	1×10^3 to 1×10^6 copies/ml	Not applicable
Replicates	8	8	24
Data Points	LightCycler® 480 Instrument	LightCycler® 480 Instrument	LightCycler® 480 Instrument
Intra-run precision	32	32	24
Inter-run precision	96	96	72
Lot to lot precision	160	160	144

Table 7: Experimental setup to perform precision analysis.

Parvo B19 Virus	Intra-Run Precision		
Concentration (copies/ml)	**Mean (Cp)**	**SD (Cp)**	**CV (%)**
1×10^6	18.0	0.14	0.78
1×10^5	21.5	0.21	1.00
1×10^4	24.9	0.31	1.23
1×10^3	28.5	0.39	1.37
Parvo B19 Virus	**Inter-Run Precision**		
1×10^6	18.2	0.34	1.89
1×10^5	21.6	0.32	1.49
1×10^4	25.2	0.44	1.73
1×10^3	28.7	0.38	1.34
Parvo B19 Virus	**Lot to lot Precision***		
1×10^6	18.2	0.16	0.90
1×10^5	21.7	0.21	0.97
1×10^4	25.1	0.39	1.55
1×10^3	28.6	0.38	1.32

Table 8: Results for intra-assay, inter-assay and lot-to-lot precision determined using Parvo B19 virus material spiked in EDTA plasma.
* mean over 6 different lots

Hepatitis A Virus	Intra-Run Precision		
Concentration (copies/ml)	**Mean (Cp)**	**SD (Cp)**	**CV (%)**
1×10^6	19.4	0.18	0.94
1×10^5	23.0	0.28	1.23
1×10^4	26.2	0.12	0.45
1×10^3	29.7	0.12	0.41
Hepatitis A Virus	**Inter-Run Precision**		
1×10^6	19.4	0.26	1.33
1×10^5	22.9	0.21	0.92
1×10^4	26.2	0.12	0.45
1×10^3	29.6	0.32	1.07
Hepatitis A Virus	**Lot to lot Precision***		
1×10^6	19.7	0.22	1.10
1×10^5	23.1	0.15	0.67
1×10^4	26.6	0.39	1.46
1×10^3	30.0	0.26	0.87

Table 9: Results for intra-assay, inter-assay and lot-to-lot precision determined using HAV spiked in EDTA plasma,
* mean over 6 different lots

CycA Assay	Intra-Run Precision		
	Mean (Cp)	**SD (Cp)**	**CV (%)**
Reference sample	18.1	0.20	1.12
CycA Assay	**Inter-Run Precision**		
Reference sample	18.0	0.21	1.15
CycA Assay	**Lot to lot Precision***		
Reference sample	17.9	0.16	0.87

Table 10: Results for intra-assay, inter-assay and lot-to-lot precision for the CycA assay performed with DNA isolated from whole blood.
* mean over 6 different lots

10.4 Interfering Substances

The influence of interfering substances was evaluated using sample material spiked with Parvo B19 virus, and with an increasing concentration series of the following prevalent substances: Hemoglobin (Hemoglobin human, Sigma-Aldrich Co. LLC), bilirubin (Sigma-Aldrich Co. LLC) and lipids (Intralipid 20 % emulsion, Sigma-Aldrich Co. LLC).

The experimental setup to evaluate the influence of interfering substances and the corresponding results are described below:

Parameter	Parvo B19 Virus
Kit Type	MagNA Pure 96 DNA and Viral NA SV Kit
Purification Protocol	Viral NA Universal SV
Sample Type	Whole blood
Sample Input Volume	200 µl
Elution Volume	50 µl
Virus concentration	1×10^5 copies/ml
Interfering Substances	Hemoglobin, bilirubin and lipids used in different concentrations
Replicates per inhibitor concentration	3

Table 11: Experimental setup to evaluate the influence of the interfering substances hemoglobin, bilirubin and lipids.

Results

Hemoglobin (mg/dl)	Cp	Bilirubin (mg/dl)	Cp	Lipids (mg/dl)	Cp
0	21.0	0	20.8	0	21.6
100	21.3	6.6	21.0	200	21.6
200	21.2	13.2	21.2	400	21.5
300	21.2	19.8	20.9	600	21.9
400	21.1	26.4	21.0	800	21.9
500	21.1	33.0	21.3	1000	21.8
600	21.0	39.5	21.4	1200	21.5
700	21.1	46.1	21.3	1400	21.6
800	21.3	52.8	21.0	1600	21.3
900	21.5	59.4	21.0	1800	21.2
1000	n.d.*	66.0	21.5	2000	21.1
Mean	**21.1**	**Mean**	**20.8**	**Mean**	**21.6**

Table 12: Crossing point (Cp) results for samples spiked with interfering substances.
* not determined due to pipetting error.

None of the interfering substances showed an influence on the crossing points. The obtained range of crossing points is ≤ 0.8.

10.5 Testing for Cross Contamination

The risk of cross contamination was evaluated using the Parvo B 19 test. During the first two runs only negative samples were processed to test the MagNA Pure 96 System for possible contamination. In three runs, a checkerboard pattern of alternating positive and negative samples was processed. With the last run, only negative samples were processed. A sample was identified as negative, when no detection signal is obtained after 45 PCR cycles.

The experimental setup to test the MagNA Pure 96 System for possible contamination and the corresponding results are described below.

Parameter	Parvo B19 Virus
Kit Type	MagNA Pure 96 DNA and Viral NA LV Kit
Purification Protocol	Viral NA Universal LV
Sample Input Volume	500 µl
Elution Volume	50 µl
Positive samples	5×10^7 copies/ml in EDTA plasma
Negative samples	negative EDTA plasma
Number of runs	A) 2 runs only with negative samples B) 3 runs with checkerboard pattern C) 1 run only with negative samples
PCR Analysis	LightCycler® Parvo B19 Quantification Kit using a 384 well plate on LightCycler® 480 Instrument

Table 13: Experimental setup to evaluate the risk of cross contamination.

Run	Mean Cp of positive samples	Standard deviation	Positive Rate	Negative Rate
1	n/a	n/a	0/96	96/96
2	n/a	n/a	0/96	96/96
3	17.8	0.20	48/96	48/96
4	20.0	0.22	48/96	48/96
5	18.6	0.12	48/96	48/96
6	n/a	n/a	0/96	96/96

Table 14: Results of the cross-contamination experiments based on mean crossing points and call rates.

As shown in Table 14, under the above described conditions, no cross contamination was detected.

10.6 Method Comparison

JAK2 Mutation Detection

Method comparison was obtained using the MagNA Pure 96 System to test whole blood samples for the allele JAK2-V617F. This method compares the mutation ratio to the wild type. DNA was isolated using the MagNA Pure 96 System, and the established manual QIAamp DNA Blood Mini Kit method. PCR analysis was performed using JAK2 MutaQuant®Kit, according to the manufacturer's instructions.

Parameter	JAK2-V617F
Kit Type	MagNA Pure 96 DNA and Viral NA SV Kit
Purification Protocol	DNA Blood SV
Sample Type	Whole blood
Sample Input Volume	200 µl
Elution Volume	50 µl
Samples tested*	50
PCR Analysis	JAK2 MutaQuant®Kit (MQPP-02-CE/MQPP-03- CE), Ipsogen SA; Marseille on the Rotor-Gene 3000 Instrument
Comparator Method Sample preparation	QIAamp DNA Blood Mini Kit (Elution volume 85 µl)

Table 15: The experimental setup for testing whole blood samples for the allele JAK2-V617F.
* Fifty blinded clinical samples (spare samples) were obtained from routine diagnostic procedures, and measured in parallel.

n= 50 samples		Comparator		
		Negative	**Positive JAK2-V617F**	**Total**
MagNA Pure 96 DNA and Viral NA SV Kit	**Negative**	33	0	33
	Positive JAK2-V617F	0	17	17
	Total	33	17	50

Table 16: Altogether, 50 samples were included in this analysis. Agreement for identifying positive and negative samples was 100 % between the automated MagNA Pure 96 method and the manual QIAamp DNA Blood Mini Kit.

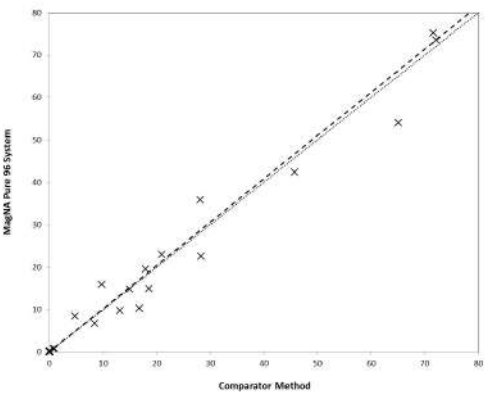

Figure 5: The method comparison was based on the final ratio mutation to WT (wild type) between the purification using the MagNA Pure 96 DNA and Viral NA SV kit compared to that of the QIAamp DNA Blood Mini Kit.

····· Identity Line, - - - - - Bablok Regression (1.02x); Pearson r= 0.989

Pneumocystis jiroveci DNA

Method comparison data obtained using the MagNA Pure 96 System were assessed by testing bronchoalveolar lavage (BAL) samples for *Pneumocystis jiroveci* DNA.

The following experimental setup was performed:

Parameter	*Pneumocystis jiroveci* DNA
Kit Type	MagNA Pure 96 DNA and Viral NA LV Kit
Purification Protocol	Pathogen Universal LV
Sample Type	Bronchoalveolar lavage (BAL)
Sample Input Volume	500 µl
Elution Volume	100 µl
Samples tested*	96
PCR Analysis**	In-house real-time qPCR assay in combination with LightCycler® FastStart DNA Master HybProbe LoD: < 50 copies/ reaction Linear range: 10^3 - 10^8 copies/ml Samples > 10^4 copies/ml are assessed as positive
Comparator Method **Sample preparation**	QIAamp DNA Mini Kit: Sample volume: 500 µl Elution volume: 200 µl

Table 17: Experimental setup for testing bronchoalveolar lavage (BAL) samples for *Pneumocystis jiroveci* DNA.

* Ninety-six blinded clinical samples (spare samples) were obtained from routine diagnostic procedures, and measured in parallel.

**The PCR assay was developed and validated by the Institute of Medical Microbiology and Hygiene, University Hospital Regensburg.

n= 96 samples		Comparator		
		Negative	***Positive*** *P.jiroveci DNA*	**Total**
MagNA Pure 96 DNA and Viral NA SV Kit	**Negative**	70	1	71
	Positive *P.jiroveci DNA*	0	25	25
	Total	70	26	96

Table 18: Altogether, 26 samples out of 96 were assessed positive. The positive agreement for the positives was 25 out of 26 (96 %). The positive agreement for the negatives was 70 out of 70 (100 %).

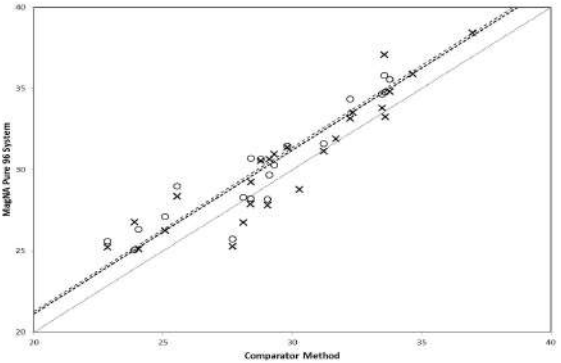

Figure 6: The method comparison for the positive samples based on the crossing points measured in 2 consecutive runs performing the *Pneumocystis jiroveci* in-house real-time qPCR assay.

……. Identity Line, - - - - - Bablok Regression (1.01x+0.91); Pearson r= 0.9312 (Run 1: ×) _____ Bablok Regression (1.01x +1.07); Pearson r= 0.9304 (Run 2: o)

11. SUPPLEMENTARY INFORMATION

11.1 Symbols

In this document, the following symbols are used to highlight important information.

Symbol	Description
	Important note
	Information note
IVD	For *in vitro* diagnostic use.
CE	The reagent complies with the requirements of the IVDR Regulation (EU) 2017/746.
REF	Catalogue Number
GTIN	Global Trade Item Number
UDI	Unique Device Identifier
LOT	Batch Code
	Use-by date
	Date of Manufacture
CONTENT	Content of Kit
	Temperature Limit
	Consult instructions for use
D	Distributed by
	Manufacturer
EC REP	Authorized representative in the European Community
	Importer

11.1.1 Changes to Previous Version

- Update to comply with the requirements of the IVD Regulation (EU) 2017/746.
- Update of the name of optional reagents.

12. TRADEMARKS

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13. REGULATORY DISCLAIMER

For *in vitro* diagnostic use.

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