

**MANUAL**

**chemagic™**  
**Viral NA/gDNA 200 Kit H96**

**Product number: CMG-1049**

Reagents for 960 extractions.

**Version: 231122 EN**

**GTIN 4260543360290**

**Manufacturer:** Revvity chemagen Technologie GmbH  
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**CONTENT OF THE KIT**

<b>Reagents</b>	<b>Plastic material</b>
Magnetic Beads	chemagic Deep Well Plate 2 mL
Lysis Buffer 1 (Plasma) (not used in this protocol)	chemagic Low Well Plate
Binding Buffer 2 (Plasma) (not used in this protocol)	chemagic Tips 96 Racks
Lysis Buffer 1 (Blood)	
Binding Buffer 2 (Blood)	
Wash Buffer 3	
Wash Buffer 4	
Wash Buffer 5	
Elution Buffer 6	
Proteinase K (lyophilized) (not used in this protocol)	
Poly(A) RNA (lyophilized) (not used in this protocol)	
Poly(A) RNA Buffer (not used in this protocol)	

**REQUIRED INSTRUMENT**

<b>Item</b>	<b>Product no.</b>
chemagic 360 instrument or	2024-0020
chemagic 360-D instrument	2024-0010
chemagic 96 Rod Head Set (supplied with the instrument)	CMG-370

## PURIFICATION PROTOCOL FOR 200 $\mu$ L OF BLOOD USING THE CHEMAGIC 360 WITH INTEGRATED CHEMAGIC DISPENSER

Protocol name: Blood - chemagic Body Fluid 360 prefilling VD141014.che

### Positioning Tips and Plates on the Tracking System

*Can be done manually or by an integrated robotic system*

Position	Material in position
Position 1	chemagic Tips 96 Rack (on special adapter)
Position 2	chemagic Low Well Plate (on special adapter) prefilled with 150 $\mu$ L Magnetic Beads
Position 3	chemagic Deep Well Plate 2 mL containing:
	200 $\mu$ L sample
	Lysis Buffer 1 (Blood) [added automatically]
	Binding Buffer 2 (Blood) [added automatically]
	<b>NOTE: See "Processing Steps".</b>
Position 4	empty chemagic Deep Well Plate 2 mL (on special adapter) [Wash Buffer 3 added automatically]
Position 5	empty chemagic Deep Well Plate 2 mL (on special adapter) [Wash Buffer 4 added automatically]
Position 6	empty chemagic Deep Well Plate 2 mL (on special adapter) [Wash Buffer 5 added automatically]
Position 7	empty chemagic Deep Well Plate 2 mL (on special adapter) [water added automatically]
Position 8	chemagic Deep Well Plate 2 mL (on special adapter) prefilled with 50 - 100 $\mu$ L Elution Buffer 6

## DETAILED PROTOCOL DESCRIPTION

### Protocol Procedure

The protocol is suitable for processing up to 96 samples in parallel (see “Processing Steps” below). For detailed instructions on the use of the chemagic 360 instrument, please refer to the chemagic 360 User Manual.

**NOTE: Samples and reagents must be brought to room temperature (+19 to +25 °C) before use.**

Connect the reagent bottles to the chemagic 360 instrument as follows:

<b>Pump</b>	<b>Buffer</b>
Pump 1	Lysis Buffer 1 (Blood)
Pump 2	Binding Buffer 2 (Blood)
Pump 3	Wash Buffer 3
Pump 4	Wash Buffer 4
Pump 5	Wash Buffer 5
Pump 6	Purified water

**NOTE: Recap the bottles tightly immediately after use or keep the bottles connected tightly to the chemagic 360 instrument. Binding Buffer 2, Wash Buffer 3, Wash Buffer 4 and Wash Buffer 5 contain ethanol. If ethanol evaporates, the optimal yield or detection sensitivity cannot be guaranteed.**

## Processing Steps

1. Check all kit components for integrity. In case of damage, contact your supplier.
2. Before prefilling the plates mark each plate with material in position (samples, Magnetic Beads and buffers).
3. Reconstitute the Proteinase K and Poly(A) RNA:

Component	Reconstitution
Proteinase K	Add molecular biology grade water to Proteinase K bottle and mix gently until dissolved (volume see label).
Poly(A) RNA	Dissolve lyophilized Poly(A) RNA by adding Poly(A) RNA Buffer to the Poly(A) RNA tube and mix thoroughly (volume see label).

4. Fill and prime the chemagic 360 tubing with reagents by choosing the protocol “**prime manifolds H96 all 360 V150116.che**”. Press [Insert IDs], follow the instructions given in the chemagic QA software and start priming by pressing [OK]. If functions enabling the ID data input are deactivated, start priming directly by pressing [Start].

**NOTE: Priming needs to be done when reagent bottles are connected to the chemagic 360 instrument for the first time or when the instrument’s tubing is not already filled with the above mentioned reagents.**

5. If priming is not needed, select the protocol “**check manifolds H96 all 360 V150116.che**” and press [Insert IDs] or - if the enhanced functions are deactivated - [Start]. A small volume of buffer will be dispensed by each pump sequentially starting with the first pump used for this application. If one of the pumps does not show dispensing of buffer through all nozzles, please use the corresponding priming protocol for this pump. Performing several runs a day it is only necessary to check the pumps once at the beginning of the day.
6. Select the protocol “**Blood - chemagic Body Fluid 360 prefilling VD141014.che**” and press [Insert IDs] and follow the instructions given in the chemagic QA software.
7. Ensure chemagic Tips 96 Rack contains enough tips and is aligned with the positions of the samples and place the chemagic Tips 96 Rack in position 1 on the tracking system.
8. Check the volumes in the buffer supply containers and confirm by pressing [OK].

**NOTE: Take care that all buffer supply bottles contain enough buffer. Only if the liquid level for all buffers is sufficient 96 isolations can be performed (see “Minimum Filling Volumes”).**

9. Select the number of samples for prefilling by using the drop down menu. The scheme for positioning the samples will be shown after selecting. Take care to use the given positions. Confirm by pressing [OK].
10. Prefill the selected wells of the sample plate with up to 200 µL sample. To ensure the homogeneity of the samples, mix the samples gently prior to pipetting in the wells of the sample plate.

11. Prefill the Elution Buffer 6 and the thoroughly resuspended Magnetic Beads by pipetting manually according to each corresponding well in use.

Component	Plate position on chemagic 360 instrument	Volume/ well
Magnetic Beads	2	150 µL
Elution Buffer 6	8	50 – 100 µL

**NOTE: The Magnetic Bead suspension should be mixed vigorously before dispensing; otherwise the suspension is not homogenous and the DNA yield could be low.**

12. Place the chemagic Deep Well Plates 2 mL on the tracking system according to the instructions given by the chemagic QA software.
13. Place the sample plate in position 3 on the tracking system.
14. Check all plates for accurate orientation and fitting.
15. Close the front door and start the process by pressing [Start].
16. The automated NA extraction process is initiated.
17. After the isolation procedure has finished use the [Turn Table] button to unload the tracking system. Each click on [Turn Table] moves the tracking system (table) clockwise by one position.

**ATTENTION! Never move the tracking system (table) manually. This might damage the instrument. All movements must be performed with the [Turn Table] function.**

**NOTE: Opening the chemagic 360 instrument door while the automated extraction run is ongoing, will terminate the run and the samples in process may be lost.**

For information on cleaning the instrument see section “Cleaning and Maintenance”.

## CLEANING AND MAINTENANCE

Cleaning and maintenance of the system is described in detail in the chemagic 360 User Manual. The system cleaning is performed once per week. Clean the chemagic Dispenser as follows.

- Select the protocol “**regular cleaning procedure 96 dispenser 360 V150116.che**” and press [Insert IDs] or [Start] if the enhanced functions are deactivated. Follow the instructions as given in the software.
- Prior to the next use of the chemagic Dispenser perform the appropriate priming protocol.
- The cleaning of the chemagic Dispenser with 70 % ethanol is recommended once per month. Simply use the “**intensive cleaning procedure H96 dispenser 360 V150116.che**” instead of the regular one for this purpose.
- If the chemagic Dispenser will not be used for longer period of time, it is mandatory to perform the "regular cleaning procedure" to maintain the performance of the instrument when bringing it back into service.
- Take care to drain the waste container frequently. Please consult local, state and federal regulations for additional guidance on disposal.

### Minimum Filling Volumes

The buffer levels in the containers connected to the chemagic Dispenser should not fall below the values given in the following table:

Buffer	Position	Minimum filling volume for 96 Samples
Lysis Buffer 1 (Blood)	1	150 mL
Binding Buffer 2 (Blood)	2	200 mL
Wash Buffer 3	3	150 mL
Wash Buffer 4	4	150 mL
Wash Buffer 5	5	150 mL
Purified water	6	150 mL

## ADDITIONAL INFORMATION

### Safety Information

To avoid injuries when working with the kit components, always wear safety glasses, disposable gloves, and protective clothing. For detailed information, please refer to the corresponding safety data sheets (SDS).

### **Storage Conditions**

All kit components can be stored at room temperature, except the reconstituted Proteinase K.

Store reconstituted Proteinase K at +2 to +8 °C. The reconstituted Proteinase K is stable for 28 days at +2 to +8 °C. For long term storage we recommend to store the reconstituted Proteinase K in aliquots at - 20 °C. Do not freeze the Proteinase K aliquots after thawing.

Binding Buffer 2, Wash Buffer 3, Wash Buffer 4 and Wash Buffer 5 contain ethanol. Longer storage of the buffers without lids should be avoided. If ethanol evaporates the optimal yield cannot be guaranteed.



## **GENERAL REMARKS**

The Elution Buffer 6 included in this kit is 10 mM Tris-HCl pH 8.0. TE buffer pH 8.0 can also be used without any protocol adjustments. Water pH 8.0 may also be used, but the yield could be slightly decreased.

The Magnetic Bead suspension should be mixed vigorously before dispensing, otherwise the suspension is not homogenous, and the DNA yield could be low.

Expiry dates are stated on the box of the kit. Do not use any component of the kit beyond the expiration date.

## **UV MEASUREMENTS/ REAL TIME PCR**

In some cases you may find some traces of Magnetic Beads left in the eluate. Such particles will not interfere with standard PCR and most downstream applications but may increase the background in UV measurements or could influence real time PCR.

In such a case we recommend to perform an additional separation step using an appropriate chemagic magnetic stand in order to separate traces of particles.



## WARRANTY

Any change or modification of the procedure not recommended by the manufacturer may affect the results, in which event Revvity chemagen Technologie GmbH and its affiliates disclaim all warranties expressed, implied or statutory including the implied warranty of merchantability and fitness for use.

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