

## MANUAL

# chemagic™ DNA Blood 4k Kit H24

**Product number:** **CMG-1074**

Reagents for 240 extractions.

**Version:** 231123 EN

**GTIN** 4260543360443

**Manufacturer:** Revvity chemagen Technologie GmbH  
Arnold-Sommerfeld-Ring 2  
52499 Baesweiler, Germany  
[www.revvity.com](http://www.revvity.com)

## CONTENT OF THE KIT

Reagents	Plastic material
Magnetic Beads	chemagic Tips XL
Lysis Buffer 1	chemagic Deep Well Plate 24 XL
Binding Buffer 2	chemagic Elution Tube 13 mL
Wash Buffer 3	
Wash Buffer 4	
Wash Buffer 5	
Wash Buffer 6	
Elution Buffer 7	
Proteinase K (lyophilized)	

## REQUIRED INSTRUMENT

Item	Product no.
chemagic 360 instrument or	2024-0020
chemagic 360-D instrument	2024-0010
chemagic 24 Rod Head Set (supplied with the instrument)	CMG-376

## PURIFICATION PROTOCOL FOR 4 ML OF HUMAN BLOOD USING THE CHEMAGIC 360 WITH INTEGRATED CHEMAGIC DISPENSER

Protocol name: chemagic DNA Blood4k 360 H24 EB 13ml Tubes prefilling VD191213.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 XL (special rack)
Position 2	chemagic Deep Well Plate 24 XL (on special adapter) containing:
	4 mL blood
	15 µL Proteinase K
	Lysis Buffer 1 [added automatically] and
	Binding Buffer 2 [added automatically]
	<b>NOTE: See “Processing Steps”.</b>
Position 3	chemagic Deep Well Plate 24 XL (on special adapter) prefilled with 400 µL Magnetic Beads [Wash Buffer 3 added automatically]
Position 4	empty chemagic Deep Well Plate 24 XL (on special adapter) [Wash Buffer 4 added automatically]
Position 5	empty chemagic Deep Well Plate 24 XL (on special adapter) [Wash Buffer 5 added automatically]
Position 6	empty chemagic Deep Well Plate 24 XL (on special adapter) [Wash Buffer 6 added automatically]
Position 7	chemagic Elution Tubes 13 mL (on special rack) prefilled with 300 - 500 µL Elution Buffer 7
Position 8	empty chemagic Elution Tubes 13 mL for used Disposable Tips (special rack) (following discarding of Disposable Tips the Tubes can be re-used for the same step)

## DETAILED PROTOCOL DESCRIPTION

### Protocol Procedure

The protocol is suitable for processing up to 24 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
Pump 2	Binding Buffer 2
Pump 3	Wash Buffer 3
Pump 4	Wash Buffer 4
Pump 5	Wash Buffer 5
Pump 6	Wash Buffer 6

**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:

Component	Reconstitution
Proteinase K	Add molecular biology grade water to Proteinase K bottle and mix gently until dissolved (volume see label).

4. Fill and prime the chemagic 360 tubing with reagents by choosing the protocol "**prime manifolds H24 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 H24 all 360 V150116.che**" 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 "**chemagic DNA Blood4k 360 H24 EB 13ml Tubes prefilling VD191213.che**" and press [Insert IDs] and follow the instructions given in the chemagic QA software.
7. Ensure chemagic Rack contains enough tips and is aligned with the positions of the samples and place the chemagic Rack with chemagic Tips XL 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 containers positioned on the plastic stand contain enough buffer. 24 isolations can only be performed if the buffer levels are not below the indicated minimum filling volume (see below "Minimum Filling Volumes"). Otherwise replace with a new container and transfer the remaining buffer volumes into the new container.**

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 4 mL 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 7 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	3	400 µL
Elution Buffer 7	7	300–500 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. Add 15 µL Proteinase K to the wells containing sample.
13. Place the chemagic Deep Well Plate 24 XL on the tracking system according to the instructions given by the chemagic QA software.
14. Place the sample plate in position 2 on the tracking system.
15. Check all plates for accurate orientation and fitting.
16. Close the front door and start the process by pressing [Start].
17. The automated DNA extraction process is initiated.
18. 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 24 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 H24 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 24 Samples
Lysis Buffer 1	1	150 mL
Binding Buffer 2	2	350 mL
Wash Buffer 3	3	200 mL
Wash Buffer 4	4	200 mL
Wash Buffer 5	5	200 mL
Wash Buffer 6	6	200 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 7 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.

Revvity chemagen Technologie GmbH, its affiliates and its authorized distributors, in such an event, shall not be liable for damages indirect or consequential.

November 2023

[www.revvity.com](http://www.revvity.com)

revvity