magtivio

Technical Note

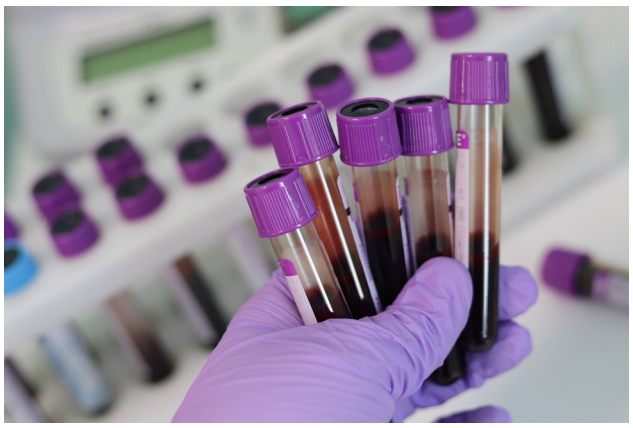
MagSi-DNA Body Fluid and PurePrep 96 Nucleic Acid Purification System

Product Description

MagSi-DNA Body Fluid allows fast and cost-effective extraction of DNA from fresh or frozen blood samples, fresh or preserved saliva samples or swab wash solutions. The kit can be easily automated on the PurePrep 96 Nucleic Acid Purification System with the suitable consumables. The PurePrep 96 instrument can process up to 96 samples in a single run. It uses magnetic rods that collect and transfer magnetic particles across micro plates with a turntable-based design, eliminating the need for multiple pipette tips. Carefully designed rod covers prevent cross-contamination and allow for reproducible and efficient sample mixing and magnetic particle resuspension.

General Kit Features

- Short protocols, complete processing at room temperature possible
- Consistently high yield of DNA – up to 10 µg from 200 µL whole blood
- Excellent purity A260/280>1.7, A260/230>1.5
- Suitable for many genomic applications including PCR, DNA sequencing



Protocol information

The current technical note describes the processing of blood samples on the PurePrep 96 Purification System.

First, 200 µL of Lysis Buffer U1 and 10 µL of Proteinase K solution are combined with a 200 µL blood sample. The initial sample lysis step can be performed in a Deep-well plate which will be further processed on the PurePrep 96 system. It is recommended to incubate the mixture with shaking (e.g. 1000 rpm using a suitable plate tube shaker). The lysis step can be performed at room-temperature, a heat incubation is not required. Following the initial sample lysis 20 µL of MagSi-DNA BF beads and 400 µL Binding Buffer U1 are added. The required amounts of Wash Buffer I and Wash Buffer II (2 x 800 µL Wash Buffer I and 1 x 800 µL Wash Buffer II, total of three wash steps) are dispensed into Deep-well plates, the Elution Buffer (up to 200 µL) is pre-dispensed into square-well micro-titer Elution Plate. All further steps are now performed on the PurePrep 96 system.

The prefilled and prepared plates are placed on the turntable of the PurePrep96 instrument and the purification program is started.

Finally, the obtained purified DNA can be used directly for down-stream analysis.

The MagSi-DNA Body Fluid magnetic beads are optimized for extremely fast separation even from sample lysates with a high viscosity. The purification time per 96 samples is approximately 25 minutes.

Table 1: Required reagents and equipment

Product	Art. No.	Required number per run
MagSi-DNA Body Fluid (96 preps)[§]	MDKT00140096	-
MagSi-DNA Body Fluid (10x96 preps)[§]	MDKT00140960	-
PurePrep 96 Nucleic Acid Purification Instrument	AS00001	-
2 mL Deep-well Plate with square wells for KingFisher™/PurePrep 96 Instrument	MDPL00200060	4
200 µL square-well Elution Plate for KingFisher™/PurePrep 96	MDPL00190060	1
96 well Tip-Comb for KingFisher™/PurePrep 96	MDPL00210060	1

[§]bulk quantities of the kit available on request

User notes

- PurePrep 96 protocol files are available on request (email: info@magtivio.com)
- Protocol files are previously imported on the instrument but can also be easily imported to the instrument via USB drive
- For tips and advice on how to adapt the instrument protocol please email info@magtivio.com
- MagSi-DNA Body Fluid is optimized for DNA purification fresh or frozen blood, saliva samples or swab wash solutions
- For further information about the MagSi-DNA Body Fluid kit, please refer to the Product Manual

Importing the instrument protocol (if needed)

To save the MagSi-DNA Body Fluid protocol to your PurePrep 96 Nucleic Acid Purification System:

1. Create a folder named "Items" on the USB drive supplied with the instruments. Copy the protocol file to the "Items" folder
2. Plug in the USB drive to one of the instrument´s USB ports.
3. Switch on the instrument
4. From the main menu select "Settings"
5. Select "Im.&export", and "Import"
6. Select the file to be imported from the list or select all files
7. Select "Import", file(s) will be uploaded to the instrument
8. Select "Back" two times to return to the main menu
9. Select "Manage Prog."
10. Select the protocol to create a shortcut

Filling the extraction plates

1. Prepare a Lysis Working Solution by adding Proteinase K to Lysis Buffer U1 as following:
    - Per 200 µL Lysis Buffer U1, add 10 µL Proteinase K (20 mg/mL)
    - Prepare a little more Lysis Working Solution than needed due to loss during pipetting (e.g. for 96 extractions prepare solution for 100 extractions)
    - Use the Lysis Working Solution immediately within 15 min
2. Prepare Magnetic Beads / Binding Mix as following:
    - Per sample mix 400 µL Binding Buffer U1 add 20 µL of MagSi-DNA Body Fluid beads
    - Prepare a little more Magnetic Beads / Binding Mix than needed due to loss during pipetting (e.g. for 96 extractions prepare solution for 100 extractions

Table 2: Plate filling instructions for PurePrep 96 Nucleic Acid Purification System and MagSi-DNA Body Fluid protocol

Plate name	Plate type	Reagent (Kit component)	Volume	Instrument Position ("Plate")
Tip plate	2 mL Deepwell Plate with square wells for KingFisher™/PurePrep 96 *(reusable!)*	Empty, for loading Tip-Comb only	N/A	1
Sample Plate	2 mL Deepwell Plate with square wells for KingFisher™/PurePrep 96	Sample Lysis Working Solution after lysis incubation add: MagSi-DNA BF beads / Binding Buffer U1 mixture	200 µL 210 µL 420 µL	2
Wash Plate 1	2 mL Deepwell Plate with square wells for KingFisher™/PurePrep 96	Wash Buffer I	800 µL	3
Wash Plate 2	2 mL Deepwell Plate with square wells for KingFisher™/PurePrep 96	Wash Buffer I	800 µL	4
Wash Plate 3	2 mL Deepwell Plate with square wells for KingFisher™/PurePrep 96	Wash Buffer II	800 µL	5
Elution Plate	200 µL square-well Elution Plate for KingFisher™/PurePrep 96	Elution Buffer	100 µL	8

3. Continue by filling the plates as described in Table 2, and steps 4 to 6:
   - Sample Plate (210 µL Lysis Working Solution)
   - Wash Plate 1 and 2 (2 plates, both with Wash Buffer I)
   - Wash Plate 3 (Wash Buffer II)
   - Elution Plate (Elution Buffer)
4. Add 200 µL sample to the Sample Plate.

   Note: Step 3 and 4 can be exchanged
5. Place sample plate on a plate shaker for 10 min at room temperature
6. Add 420 µL Magnetic Beads / Binding Mix to the Sample Plate.

   Important note:

   Mix the Magnetic Beads / Binding very well prior to adding to avoid sedimentation of the beads within the dispensing step. Steps 4 and 5 can be exchanged
7. Prepare the remaining plates for the PurePrep 96 instrument

Executing the protocol

1. Load all plates to the PurePrep 96 instrument on indicated positions, see table 2

   Use the clockwise / counter clockwise buttons on the instrument to rotate the turntable to the indicated positions
2. Make sure that the plates are loaded in the correct orientation (especially when using partially filled plates). Place the A1 well of each plate to the A1 mark on the instruments turntable. Make sure that the plates are fixed to the positions by the clamps
3. Press on the Tab "Run Prog.", select the shortcut icon for the protocol and press Run to start the protocol
4. At the end of the run remove all plates from the instrument

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