MAGBIO

Liquid Biopsy Research - “We are where you start”

HighPrep™ Blood DNA-FTA Kit

Catalog Nos. HPBS-DBS25, HPBS-DBS96, HPBS-DBS96x4
Manual Revision v1.0

- Purify DNA from dried Blood spots
- Magnetic beads based chemistry

PROTOCOL

Contents

For Research Use Only. Not for use in diagnostic procedures.

Information in this document is subject to change without notice.

Product Description

HighPrep Blood DNA-FTA Kit is special designed for purifying DNA from dried blood spots. The kit uses the special lysis condition with MagBio magnetic particles technology to isolate the high-quality genomic DNA. The purified genomic DNA is fully digestible with all restriction enzymes tested, and is completely compatible with downstream applications including Southern Blot analysis, PCR, NGS etc. The blood should be spotted and dried on suitable filter paper or specimen collection cards. Typical yields of genomic DNA will vary depending on the cell density of the blood sample. The kit contains sufficient materials for 25, 96, or 384 preparations.

Kit Contents and Storage

HighPrep™ Blood DNA-FTA Kit Catalog No.	**HPBS-DBS25**	**HPBS-DBS96**	**HPBS-DBS96x4**	**STORAGE**
Number of Preps	**25**	**96**	**384**	
Mag-D2 Particles	0.28 ml	1.1 m l	4.4 m l	2-8°C
MB Lysis Buffer	7 ml	28 ml	115 ml	15-25°C
MB Binding Buffer	7 ml	28 ml	115 ml	15-25°C
MPW Wash Buffer	8 ml	28 ml	115 ml	15-25°C
FDW Wash Buffer	10 ml	36 ml	150 ml	15-25°C
MB Elution Buffer	5 ml	15 ml	60 ml	15-25°C
Proteinase K Solution	0.55 ml	2.1 ml	8.4 ml	2-8°C
DNA Binding Enhancer DBE	0.14 ml	0.55 ml	2.2 ml	2-8°C

[1] *Ethanol must be added prior to use. See Preparation of Reagents*

Stability

All components are stable for 12 months when stored accordingly.
[2]Pro K Solution comes in a ready to use solution. Component is stable for 1 year when stored at 15-25°C. For storage longer than 1 year, storage at 2-8°C is recommended.

Safety Information

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs). MSDS can be downloaded from the "Product Resource" tab when viewing the product kit.

Preparation of Reagents

Prepare the following components for each kit before use:

Catalog No.	Component	Add 100% Ethanol	Storage
HPBS-DBS25	MPW Buffer	10 mL	Room Temp 15-25°C
	FDW Buffer	25 mL	Room Temp 15-25°C
Components are stable for 1 year when stored closed at room temperature			

Catalog No.	Component	Add 100% Ethanol	Storage
HPBS-DBS96	MPW Buffer	35 mL	Room Temp 15-25°C
	FDW Buffer	90 mL	Room Temp 15-25°C
Components are stable for 1 year when stored closed at room temperature			

Catalog No.	Component	Add 100% Ethanol	Storage
HPBS-DBS96x4	MPW Buffer	140 mL	Room Temp 15-25°C
	FDW Buffer	360 mL	Room Temp 15-25°C
Components are stable for 1 year when stored closed at room temperature			

Protocol: Blood DNA-FTA Kit - microcentrifuge tube or plate format

Equipment and Reagents to Be Supplied by User

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, please consult the appropriate material safety data sheets (MSDSs) from each product supplier.

- ☐ 3 mm single-hole paper puncher
- ☐ Benchtop microcentrifuge
- ☐ Micropipettors
- ☐ Nuclease-free ~2 mL microcentrifuge tubes
- ☐ Magnetic separation device
- ☐ Vortex
- ☐ Water bath, incubator, or heat block capable of 65°C
- ☐ Water bath, incubator, or heat block capable of 55°C
- ☐ 100% Ethanol
- ☐ Optional: 10mg/ml RNase A (when RNA-free genomic DNA is required)

Things to do before starting

- ☐ Prepare MPW and FDW according to Preparation of Reagents Section.
- ☐ Preset water bath, incubator or heating blocks to 65°C and 55°C.
- ☐ Preheat Elution Buffer to 65°C.
- ☐ Suspension **Mag-D2 Particles** by vortex.

Protocol

1. **Sample Preparation: Use a 3 mm (1/8 inch) diameter single-hole paper puncher to cut 3-6 pieces from a dried blood spot and place them in a Nuclease-free microcentrifuge tubes.**

2. **Add 250µl MB Lysis Buffer, and 20ul Proteinase K, vortex to mix thoroughly.**

3. **Incubate samples at 55°C for 30 minutes, Incubation may be performed for several hours or overnight if necessary. Vortex briefly once during incubation.**

   Optional: Centrifuge at 10,000 x g for 1 minute at room temperature to pallet the solid materials.

4. **Transfer ~250 µl clear solution to a new microcentrifuge tube, don't transfer any solid pieces to new tube.**

   Optional: If RNA-free gDNA is required, add 10 µL RNase A (10 mg/mL, not provided) and incubate for 5 minutes at room temperature.

5. **Add 250 ul MB Binding buffer and pipette mix 20 times or vortex for 20 seconds. Incubate at 55°C for 10 minutes, Mix sample once during incubation. Cool the sample at room temperature for 5 minutes.**

6. **Add 250 µl 100% Ethanol and 10 µl Mag-D2 Particles to each sample, and pipette mix 20 times or vortex for 20 seconds.**

   Optional: Add 5 µl DBE to each sample if DNA content from sample is expected to be low.

7. **Incubate the samples for 10 minutes at room temperature, and briefly mix samples several times during incubation.**

8. **Place the sample tubes on the magnetic separation device for 2-5 minutes at room temperature, or until the magnetic particles are completely cleared from solution. Remove and discard all of liquid. Do not disturb the Magnetic Particle while aspirating the liquid.**

9. **Add 600 µl MPW buffer to the sample and re-suspend the magnetic particles by Vortex at maximum speed for 1 minutes, or by pipetting up and down 10 times.**

   Note: Complete re-suspension of the magnetic Particles is critical for obtaining good purity DNA. MPW Buffer must be diluted with ethanol prior to use.

10. **Place the tubes back on the magnetic separation device for 2-5 minutes or until the magnetic particles are completely cleared from solution. Remove and discard all of liquid. Do not disturb the Magnetic Particle while aspirating the liquid.**

11. **Add 600 µl FDW Buffer to the sample and re-suspend the magnetic particles by Vortex at maximum speed for 1 min or by pipetting up and down 10 times.**

    Note: FDW Buffer must be diluted with ethanol before use.

12. **Place the tubes back on the magnetic separation device for 2-5 minutes or until the magnetic particles are completely cleared from solution. Remove and discard all of liquid. Do not disturb the Magnetic Particle while aspirating the liquid.**

13. **Repeat Steps 11-12 for a second DNA Wash.**

14. **Leave the tube on the magnetic separation device for 5-10 minutes to air dry the Mag-D2 Particles. Remove any residual liquid with a pipette.**

    Note: it is critical to completely remove all liquid from each tube.

15. **Add 30~50 µl 65°C heated Elution Buffer to the sample, completely re-suspend the Mag-D2 Particles by vortex at maximum speed for 1 min or by pipetting up and down 10 times.**

16. **Incubate for 10 minutes at room temperature**

    Note: Heat Elution Buffer or. Incubate at 65°C to improve yield.

17. **Place the tubes back on the magnetic separation device for 2-5 minutes or until the magnetic particles are completely cleared from elution buffer.**

18. Transfer the cleared supernatant containing purified DNA to new 1.5 ml tube.

19. The purified DNA sample may be stored at 4°C for a few days. It is recommended that samples be placed at –20°C for long-term storage.

Ordering Information

Product Description	Catalog No.	Preps
HighPrep™ Blood DNA-FTA Kit (96)	HPBS-DBS96	96
HighPrep™ Blood DNA-FTA KIt (384)	HPBS-DBS96x4	384

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