MagaBio Swabs Genomic DNA Purification Kit

Kit Components

Cat#	BSC35S1E	BSC35S1	BSC35M1
Components	**32 Tests**	**50 Tests**	**100 Tests**
Protease K (PK)	160 μL	250 μL	500 μL
Lysis Buffer	96 Well pre-packed plate 2 Pieces	25 mL	50 mL
WB1 Buffer		12 mL (add 18 mL absolute ethanol before use)	24 mL (add 36 mL absolute ethanol before use)
Wash Buffer		6 mL×2 (add 24 mL absolute ethanol before use)	12 mL×2 (add 48mL absolute ethanol before use)
Elution Buffer		10 mL	20 mL
MagaBio Reagent		0.6 mL	1.2 mL
Handbook	1	1	1

Storage

1. The kit can be transported at room temperature.
2. The kit should be stored at 2~8℃.
3. All reagents, when stored properly, are stable for 12 months from the time of delivery.

Introduction

The kit provides a very simple, fast and effective technique to isolate high quality DNA. Using one simple protocol, high yield of purified DNA can be isolated from swabs. Sample processing is based on proprietary magnetic particles—MagaBio Reagent. The pure DNA can be applied extensively in PCR, Sequencing, Southern hybridization, mutant analysis, SNP and the others.

According to the special interaction, use MagaBio nucleic acid separation system with a general protocol---sample processing, MagaBio adsorption, washing and elution, and can go high-throughput.

Principle and Advantage

DNA in the sample is liberated using Protease K (PK) and a Lysis Buffer. Released DNA is bound exclusively and specifically to the MagaBio Reagent in presence of a Binding Buffer. The DNA bound to MagaBio particles is captured by a magnet and contaminants are removed by washing with Wash Buffer once or more. The DNA is then eluted from the particles with an Elution Buffer or molecular grade water.

MagaBio Magnetic technical have great advantages:

1. Mini sample, and high purification
2. Simple and streamLine separation procedure, used for auto-platform
3. First elution can acquire 85% or more
4. No organic solvent
5. No inhibitor
6. No spin column, no centrifuge

Apparatus and materials to be prepared by the user

1. Magnetic Rack or Bioer NPA-32P purification instrument
2. Water bath or Dry bath
3. Vortex mixer
4. Absolute alcohol (For BSC35S1B and BSC35M1B)

Protocol

Note：Please add absolute ethanol to WB1 Buffer and Wash Buffer and mix thoroughly before the first use.

Sample preparation

1. Use cotton swabs in cheek wipes 15-20 times.
2. Turn the swab to a 2 mL centrifuge tube, Cut out stem part from the swab with scissors.
3. Add 400μL－500μL of soak solution to the microcentrifuge tube from the above. Mix by pulse-vortexing for 15 seconds.
4. Soak for more than 2 hours.

The manual purification

1. Sample lysis processing

1) Equilibrate all reagents and samples to room temperature.
2) Pipet 5μL of PK Solution into the bottom of a 1.5 mL microcentrifuge tube.
3) Add 300μL of sample to the microcentrifuge tube from the above.
4) Add 500μL of the Lysis Buffer to the sample from the above and mix by pulse-vortexing intensively for 15-20 seconds.
   Note: Mix the Lysis Buffer thoroughly before use, makes sure that no crystal in the Lysis Buffer.
5) Incubate at 56℃ for 20 minutes. Mixing every 10 minutes
6) Remove the tube from 56℃.

2. MagaBio adsorption

1) Add 12μL of the **well-mixed** (particles are uniformLy suspended) MagaBio Reagent.
2) Mix the tube gently and incubate for 10 minutes at room temperature, while mixing.
   Note: using an end-over-end rotator or manual mixing every 2-3 minutes.
3) Sediment the MagaBio DNA bound particles using a magnetic rack. Aspirate the supernatant, remove the tube from the magnetic rack and wash the particles as described below.

3. Washing

1) Add 500 μL of WB1 Buffer to the tube from the above. Mix well by inverting the tube several times to ensure the particles are completely dispersed. Sediment the particles on the magnetic rack and aspirate the supernatant.
2) Add 500 μL of Wash Buffer to the tube from the above. Mix well by inverting the tube several times to ensure the particles are completely dispersed. Sediment the particles on the magnetic rack and aspirate the supernatant.
3) Remove the tube from the magnetic rack and repeat washing once more following the above step.

4. Elution

1) Add 70μL of Elution Buffer and mix by pulse-vortexing intensively for 15-20 seconds. Incubate at 70℃ for 5 minutes.
   Note: vortex gently every 2-3 minutes.
2) Sediment the particles on the magnetic rack and carefully transfer the supernatant containing the isolated DNA into a clean tube. The material is ready for further analysis. If the isolated DNA sample is not going to be tested on the same day, freeze at -20℃ until the time of analysis.

The automation purification

With automation machine, the kit is deeply suitable for several samples, which supply a really platform of automation or streamLine protocol and achieve high-throughput and high-speed but effective purification. An example for applying the kit on our product NPA-32P:

1. Reagent prepare

1) For BSC35S1B and BSC35M1B

Join 500μL Lysis Buffer to the 2.2mL 96 Deep Well column 1、7；500μL WB1 Buffer to the 96 Deep Well column 2、8；500μL Wash Buffer to the 96 Deep Well column 3、9 and 4、10；70μL Elution Buffer to the 96 Deep Well column 5、11；188μL pure water and 12μL MagaBio Reagent to the 96 Deep Well column 6、12

2) For BSC35S1E

Shake 96-well plate upside down for three times after placing under room temperature, then rip off plastic film, centrifuge in 96-well centrifuge for a couple of seconds (or swing by hand) to avoid adhered liquid. Rip off aluminum foil film of 96 well plates; identify the direction of the plate (magnetic beads in column 6th&12th).

3. Join 300μL sample and 5μL PK to the 96 Deep Well column 1、7.

4. Place 96 Deep Well to the instrument, then plug in 8-strip Tip and run the program.

Step	Well	Name	Waiting Time（min ： ss）	Mixing Time（min ： ss）	Magnet Time（min ： ss）	Adsorption	Speed	Volume（μL）
1	1	Lysis	0 : 0	20 : 0	0 : 0		F	800
2	6	Beads	0 : 0	0 : 15	0 : 30		S	200
3	1	Binding	0 : 0	10 : 0	0 : 35	√	F	800
4	2	Wash I	0 : 0	3 : 0	0 : 30	√	F	500
5	3	Wash II	0 : 0	2 : 0	0 : 30	√	F	500
6	4	Wash II	0 : 0	2 : 0	0 : 30	√	F	500
7	5	Elution	3 : 0	5 : 0	0 : 30		S	70
8	6	Discard	0 : 0	0 : 30	0 : 0		S	200

Lysis temperature 80℃, lysis heating end step 2 ,

Elution temperature 75℃, elution start heating step 7

Analysis Nucleic Acid

Get some DNA, diluted in a advisable factor with elution buffer.

Survey the OD260, OD280 and OD320.

Concentration（μg/mL）＝50×OD260×dilution fact

Concentration（μg/mL）≥10

1.7≤OD260-320/ OD280-320≤2.1

Important Notes

1. This kit is for research use only.
2. Before you begin, you should read this user's manual carefully.
3. The use of nuclease-free lab ware (e.g. pipettes, pipette tips, reactions vials) as well as.
4. Wearing gloves when performing the assay.
5. To avoid cross-contamination of samples and reagents use fresh aerosol-preventive pipette tips for all pipetting steps.
6. To minimize risk of carry-over contamination, it is worthwhile to physically separate the workplaces for DNA preparation.
7. After the experiment，please disinfect the workbench with 75% ethanol or 10% hypochlorous acid, and sterilize the workplace by UV lamp.

Company Information

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