Magnetic Beads Micro gDNA Extraction Kit

Store at Room Temperature

For research use only

Catalogue Numbers	Quantity
MM048	48 rxns
MM096	96 rxns

Geneaid

CERTIFICATE NO. QAIC/TW/50077

ISO 9001:2008 QMS

Introduction

The Magnetic Beads Micro gDNA Extraction Kit was designed specifically for efficient genomic DNA purification from dried blood spots (Whatman® FTA® Cards). DNA is bound to the surface of the magnetic beads and released using a proprietary buffer system. The Magnetic Beads Micro gDNA Extraction Kit can be easily adapted to automated magnetic bead separation instruments and workstations. The purified DNA can be used in qPCR and a variety of other downstream applications.

Quality Control

The quality of the The Magnetic Beads Micro gDNA Extraction Kit is tested on a lot-to-lot basis according to Geneaid's ISO-certified quality management system by isolating gDNA from 6 mm diameter cirlces cut out from Whatman® FTA® Cards.

Advantages

- Yield: 300 ng of pure high quality DNA: A260/A280 = 1.8-2.0
- Easily adapted to automated magnetic bead separation instruments and workstations
- Sample: dried blood spots (Whatman® FTA® Cards)
- Operation time: within 50 minutes (manual)

Caution

During operation, always wear a lab coat, disposable gloves, protective goggles and (anti-fog) procedure mask.

Components and Storage

Item	Volume	Product	Shipping	Storage
MM1 Buffer	1.5 ml	MM004	room temperature	dry at room temperature (15-25ºC)
	15 ml	MM048		
	30 ml	MM096		
MM2 Buffer	2 ml	MM004	room temperature	dry at room temperature (15-25ºC)
	30 ml	MM048		
	60 ml	MM096		
MM3 Buffer[1] (Add Isopropanol)	0.8 ml (1.1 ml)	MM004	room temperature	dry at room temperature (15-25ºC) for up to 1 year
	11 ml (14 ml)	MM048		
	22 ml (28 ml)	MM096		
Proteinase K[2] (Add ddH_2O)	1 mg (0.1 ml)	MM004	room temperature	dry at 4ºC
	11 mg (1.1 ml)	MM048		
	11 mg x 2 (1.1 ml x 2)	MM096		
Carrier RNA[3] (Add Elution Buffer)	1 mg (1 ml)	MM004	room temperature	dry at -20ºC
	1 mg (1 ml)	MM048		
	1 mg (1 ml)	MM096		
MW1 Buffer	2 ml x 2	MM004	room temperature	dry at room temperature (15-25ºC) for up to 1 year
	45 ml	MM048		
	60 ml	MM096		
MW2 Buffer[4] (Add Ethanol)	1 ml (4 ml)	MM004	room temperature	dry at room temperature (15-25ºC) for up to 1 year
	12.5 ml (50 ml)	MM048		
	25 ml (100 ml)	MM096		
MM Magnetic Beads	220 µl	MM004	room temperature	dry at room temperature (15-25ºC) for up to 1 year
	2.5 ml	MM048		
	5 ml	MM096		
Elution Buffer	1 ml x 2	MM004	room temperature	dry at room temperature (15-25ºC) for up to 1 year
	12 ml	MM048		
	30 ml	MM096		

[1]Add isopropanol (see the bottle label for volume) to MM3 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid isopropanol evaporation.

[2]Add ddH_2O pH7.0-8.5 (see the bottle label for volume) to Proteinase K then vortex to ensure it is completely dissolved. Check the box on the bottle. Once it is dissolved completely, centrifuge for a few seconds to spin down the mixture. For extended periods, the ddH_2O and Proteinase K mixture should be stored at 4ºC. Use only fresh ddH_2O as ambient CO_2 can quickly cause acidification.

[3]Add 1 ml of Elution Buffer to Carrier RNA then vortex to ensure it is completely dissolved to obtain a working solution of 1 µg/µl. Check the box on the bottle. Once it is dissolved completely, centrifuge for a few seconds to spin the mixture down. Divide the Carrier RNA solution into convenient volumes in several RNase-free 1.5 ml microcentrifuge tubes. The Carrier RNA solution should be stored at -20ºC. Do not freeze and thaw the Carrier RNA solution more than 3 times.

[4]Add absolute ethanol (see the bottle label for volume) to MW2 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid ethanol evaporation.

Magnetic Beads Micro gDNA Extraction Kit Protocol Procedure

IMPORTANT BEFORE USE:

1. Vortex magnetic beads to ensure they are in suspension prior to initial use.
2. Be sure and allow magnetic beads to disperse completely during the binding, wash and elution steps.
3. Add isopropanol (see the bottle label for volume) to MM3 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid isopropanol evaporation.
4. Add ddH_2O pH7.0-8.5 (see the bottle label for volume) to Proteinase K then vortex to ensure it is completely dissolved. Check the box on the bottle. Once it is dissolved completely, centrifuge for a few seconds to spin down the mixture. For extended periods, the ddH_2O and Proteinase K mixture should be stored at 4ºC. Use only fresh ddH_2O as ambient CO_2 can quickly cause acidification.
5. Add 1 ml of Elution Buffer to Carrier RNA then vortex to ensure it is completely dissolved to obtain a working solution of 1 µg/µl. Check the box on the bottle. Once it is dissolved completely, centrifuge for a few seconds to spin the mixture down. Divide the Carrier RNA solution into convenient volumes in several RNase-free 1.5 ml microcentrifuge tubes. The Carrier RNA solution should be stored at -20ºC. Do not freeze and thaw the Carrier RNA solution more than 3 times.
6. Add absolute ethanol (see the bottle label for volume) to MW2 Buffer then mix by shaking for a few seconds. Check the box on the bottle. Be sure and close the bottle tightly after each use to avoid ethanol evaporation.

Additional requirements: absolute ethanol, microcentrifuge tubes, magnetic separator, isopropanol, single hole paper punch

1. Cut out a 6 mm (1/4 inch) diameter circle from a dried blood spot (Whatman® FTA® Card) then transfer to a 1.5 ml microcentrifuge tube. **Add 200 µl of MM1 Buffer and 20 µl of Proteinase K** then mix by vortex (be sure the FTA® Card is completely immersed in the buffer). Incubate at 60ºC for 30 minutes to lyse the sample. During incubation, vortex the tube every 10 minutes. Following incubation, briefly centrifuge the 1.5 ml microcentrifuge tube to remove drops from the inside of the lid. **Transfer 200 µl of supernatant** to a clean 1.5 ml microcentrifuge tube then discard the microcentrifuge tube containing the FTA® Card.

2. **Transfer 1 µl of Carrier RNA solution and 400 µl of MM2 Buffer per sample** to a RNase-free 1.5 ml microcentrifuge tube then vortex shortly to mix. **Transfer 400 µl of MM2 Buffer (make sure Carrier RNA solution was added)** to the sample lysate then mix well by vortex. Incubate the sample mixture at 65ºC for 5 minutes. During incubation, invert the tube occasionally.

3. **Add 450 µl of MM3 Buffer (make sure isopropanol was added)** to the sample and mix well by vortex. Vortex the MM Magnetic Beads for 10 seconds prior to use to ensure they are in suspension. **Add 50 µl of MM Magnetic Beads**. Gently shake the tube for 5 minutes to ensure the MM Magnetic Beads disperse completely in the sample mixture. Place the tube in a magnetic separator for 30 seconds or until MM Magnetic Beads have pelleted. Remove and discard the supernatant.

4. **Add 600 µl of MW1 Buffer** and gently shake the tube for 1 minute. Place the tube in a magnetic separator for 30 seconds or until MM Magnetic Beads have pelleted. Remove and discard the supernatant. **Add 600 µl of MW2 Buffer (make sure ethanol was added)** and gently shake the tube for 1 minute. Place the tube in a magnetic separator for 30 seconds or until MM Magnetic Beads have pelleted. Remove and discard the supernatant. **Add 600 µl of MW2 Buffer (make sure ethanol was added)** and gently shake the tube for 1 minute. Place the tube in a magnetic separator for 30 seconds or until MM Magnetic Beads have pelleted. Remove and discard the supernatant.

5. Incubate the tube at 65ºC for 3 minutes to dry the MM Magnetic Beads. **Add 50-200 µl of Elution Buffer**. Mix the sample by pipetting then incubate at room temperature for 3 minutes. During incubation, keep the MM Magnetic Beads in suspension by mixing. Place the tube in a magnetic separator for 30 seconds or until MM Magnetic Beads have pelleted. Carefully transfer the supernatant containing the purified DNA to a clean 1.5 ml microcentrifuge tube.