Magnetic Beads gSYNC DNA Kit

For research use only

Catalogue Numbers	Quantity
MGS048	48 rxns
MGS096	96 rxns

ISO 9001:2008 QMS

Introduction

The Magnetic Beads gSYNC DNA Kit was designed specifically for genomic DNA isolation from cultured cells and animal tissues. The unique MGS1 buffer and Proteinase K is used to digest animal tissues and proteins. DNA is bound to the surface of the magnetic beads and released using a proprietary buffer system. The Magnetic Beads gSYNC DNA 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 Magnetic Beads gSYNC DNA Kit is tested on a lot-to-lot basis according to Geneaid's ISO-certified quality management system by isolating genomic DNA from 15 mg of animal tissue samples.

Advantages

- High Yield: 5-20 µg of Genomic DNA
- High Quality DNA: A260/A280 = 1.8-2.0
- Easily adapted to automated magnetic bead separation instruments and workstations
- Sample: up to 25 mg of animal tissues and cultured cells (5 x 10^6 cells)
- Storage: dry at room temperature (15-25ºC) for up to 1 year, Proteinase K should be stored dry at 2-8ºC

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
MGS1 Buffer	1.5 ml	MGS004	room temperature	dry at room temperature (15-25ºC)
	15 ml	MGS048		
	30 ml	MGS096		
MGS2 Buffer	2 ml	MGS004	room temperature	dry at room temperature (15-25ºC)
	30 ml	MGS048		
	60 ml	MGS096		
MGS3 Buffer[1] (Add Isopropanol)	0.8 ml (1.1 ml)	MGS004	room temperature	dry at room temperature (15-25ºC)
	11 ml (14 ml)	MGS048		
	22 ml (28 ml)	MGS096		
Proteinase K [2] (Add ddH_2O)	1 mg (0.1 ml)	MGS004	room temperature	dry at 2-8ºC
	11 mg (1.1 ml)	MGS048		
	11 mg x 2 (1.1 ml)	MGS096		
MW1 Buffer	8 ml	MGS004	room temperature	dry at room temperature (15-25ºC)
	80 ml	MGS048		
	160 ml	MGS096		
MW2 Buffer[3] (Add Ethanol)	2 ml (8 ml)	MGS004	room temperature	dry at room temperature (15-25ºC)
	25 ml (100 ml)	MGS048		
	12.5 ml (50 ml) 25 ml (100 ml)	MGS096		
MGS Magnetic Beads	220 µl	MGS004	room temperature	dry at room temperature (15-25ºC)
	2.5 ml	MGS048		
	5 ml	MGS096		
Elution Buffer	1 ml	MGS004	room temperature	dry at room temperature (15-25ºC)
	12 ml	MGS048		
	30 ml	MGS096		

[1] Add Isopropanol (see the bottle label for volume) to MGS3 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 to Proteinase K then vortex to ensure Proteinase K is completely dissolved. The Proteinase K solution should be stored at 2-8ºC.

[3] 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 gSYNC DNA 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 MGS3 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 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

1. **Cultured cells:** Transfer cells (up to 5×10^6) into a 1.5 ml microcentrifuge tube then centrifuge at 300 x g for 5 minutes. Discard the supernatant then resuspend cells in 200 µl of PBS by pipetting. Add **20 µl of Proteinase K** then mix well by vortex and incubate at 60ºC for 10 minutes.

Animal tissue: Transfer up to 25 mg of animal tissue into a 1.5 ml microcentrifuge tube. Add **200 µl of MGS1 Buffer** and **20 µl of Proteinase K** then vortex thoroughly. Incubate the 1.5 ml tube in a thermomixer or heated orbital incubator at 60ºC with shaking at 900 rpm overnight or until the sample lysate becomes clear. Centrifuge at 12-16,000 x g for 1 minute to remove the insoluble debris and transfer the clear supernatant to a clean 1.5 ml microcentrifuge tube.

2. Add **400 µl of MGS2 Buffer** to the sample lysate and mix well by vortex. Incubate the sample mixture at 60ºC for 5 minutes. During incubation, invert the tube occasionally. Note: For RNA-free gDNA, following 60ºC incubation, add 5 µl of RNase A (50 mg/ml) and mix by vortex. Incubate at room temperature for 5 minutes to ensure efficient RNA degradation.

3. Cool the sample lysate at room temperature for 3 minutes. **Add 450 µl of MGS3 Buffer (make sure isopropanol was added)** to the sample and mix well by vortex. Vortex the MGS Magnetic Beads for 10 seconds prior to use to ensure the MGS Magnetic Beads are in suspension. **Add 50 µl of MGS Magnetic Beads**. vertex the tube at medium speed for 5 minutes to ensure the MGS Magnetic Beads disperse completely in the sample mixture. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Remove and discard the supernatant.

4. **Add 800 µl of MW1 Buffer** then shaking vigorously or vortex at medium speed for 2 minutes. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Remove and discard the supernatant. **Add 800 µl of MW1 Buffer** then shaking vigorously or vortex at medium speed for 2 minutes. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Remove and discard the supernatant.

5. **Add 800 µl of MW2 Buffer (make sure ethanol was added)** then shaking vigorously or vortex at medium speed for 1 minutes. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Remove and discard the supernatant. **Add 800 µl of MW2 Buffer (make sure ethanol was added)** then shaking vigorously or vortex at medium speed for 1 minutes. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Remove and discard the supernatant.

6. Open the cap and incubate the tube at 60ºC for 3 minutes to dry the MGS 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 MGS Magnetic Beads in suspension by mixing. Place the tube in a magnetic separator for 30 seconds or until MGS Magnetic Beads have pelleted. Carefully transfer the supernatant containing the purified DNA to a clean 1.5 ml Microcentrifuge tube.