RUO

WizMag™ Soil DNA

User Manual

Ver 1.0

REF W7190 | W7191 | W7192 | W7193

For Research Use Only

wizbiosolutions
THE INNOVATION OF GENOMICS

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INTENDED USE

The WizMag™ Soil DNA kit is designed to be used on the CLEO™ AP16 Nucleic Acid Extractor System for simple and easy purification of total DNA from soil samples including clay, sand, and silt. This kit utilizes the silica and zirconia beads for the disruption of bacterial or fungal cell walls in the sample and the bead beating can be performed on any disrupting device which has a 2 mL tube-holding adapter including a conventional vortex machine. Purified DNA is free of enzyme inhibitors (mainly humic acids) and other contaminants, and highly suited for downstream applications such as PCR-based or enzyme-based reactions.

KIT CONTENTS

Contents	W7190	W7191	W7192	W7193	Storage
No. of preparation	64	192	32	96	Room Temperature (15-25°C)
Pre-packed 96-well Plate	4 ea	12 ea	-	-	
Pre-packed 6-well Strip	-	-	32 ea	96 ea	
Plunger	8 ea	24 ea	8 ea	24 ea	
Powerbead™ Y1 tube	64 ea	192 ea	32 ea	96 ea	
Buffer SD1	50 mL	140 mL	25 mL	70 mL	
Buffer SD2	8 mL	24 mL	4 mL	12 mL	
Buffer SD3	4 mL	9 mL	2 mL	5 mL	
RNase A solution*	140 µL	420 µL	80 µL	210 µL	
Blank solution A	500 µL	500 µL	500 µL	500 µL	

This kit is delivered under ambient conditions. When being used immediately on arrival, all of the components can be stored at room temperature.

* After dissolving, store RNase A solution at 2 - 8°C for optimal conservations. Long exposure to heat sources can deteriorate the performance of the kit significantly.

QUALITY CONTROL ANALYSIS

In accordance with Wizbiosolutions Inc. ISO 13485-certified Quality Management System, each lot WizMag™ Soil DNA kit is tested against predetermined specifications to ensure consistent product quality.

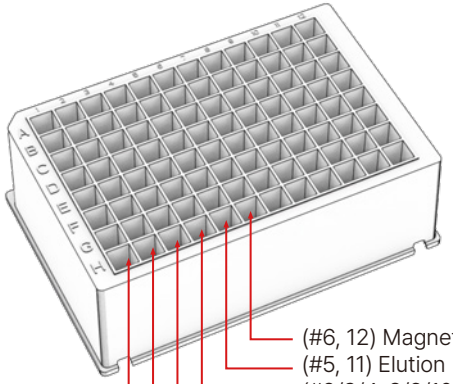
PRECAUTIONS

- This product is for research use only.
- Intended for single use only. Do not reuse.
- Check the expiration date on the box. Do not use it after the expiration date.
- Wear protective clothing, and use disposable gloves, goggles, and a mask.
- Do not eat, drink or smoke in areas where samples or test reagents are being used. Once you finish the test wash your hands.
- Specimens must be treated as potentially infectious as well as all reagents and materials that have been exposed to the samples and handled in the same manner as an infectious agent.
- Regular decontamination of commonly used equipment is recommended, especially micropipettes and work surfaces.

- This product contains irritants that are harmful when in contact with skin or eyes, or inhaled or swallowed. Care should be taken when handling this product.
- Some of the reagents in the 96-well Plate contain chaotropic which can form highly reactive compounds when combined with bleach. Do NOT add bleach or acidic solutions directly to the sample-preparation waste.
- Any significant incidents related to the product should be notified to the competent authorities and manufacturers.
- Do not use it if the package is damaged.

COMPOSITION OF THE PRE-PACKED 96-WELL PLATE (W7190 | W7191)

A total of 16 samples can be simultaneously processed per plate.



Columns 7 - 12 in the right half of a 96-well plate have the same composition as columns 1 - 6 in the left half.

COMPOSITION OF THE PRE-PACKED 6-WELL STRIP (W7192 | W7193)

(#1) Sample
(#2,3,4) Washing
(#5) Elution
(#6) Magnetic bead

PROTOCOL

A. Setup of program (For CLEO™ AP16 & AP48 devices, preset program can be used.)

Edit and run the experiment program as follows:

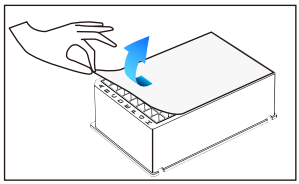
No.	1	2	3	4	5	6	7
Well No.	6	1	2	3	4	5	6
Step	Beads	Bind	Wash	Wash	Wash	Elute	Discard
Wait time	-	-	-	-	-	03:00	-
Mix time	00:20	10:00	02:00	01:00	01:00	05:00	00:20
Collect time	00:25	00:30	00:25	00:25	00:25	00:30	-
Volume(µL)	200	900	750	750	750	70	200
Mixing speed	Medium	Fast	Fast	Fast	Fast	Bottom	Medium
Collect speed	Strong	Strong	Strong	Strong	Strong	Strong	Normal
Temperature		Off				60°C	

B. Sample Preparation

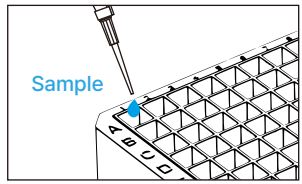
- Prepare 1.5 mL microcentrifuge tube.

1. **Apply 300 - 500 mg of soil sample and 650 µL of Buffer SD1 into Powerbead™ S1 tube and briefly vortex.**
2. **Secure the tube on a 2 mL tube holder of a vortex machine or a disrupting machine.**
3. **Vortex the tube on the highest setting (>2,000 rpm) for 10 minutes.**
   - Required processing time will vary depending on the device and application and therefore should be evaluated on a case-by-case basis.
   - For example, processing times may be as little as 2 minutes when using high-speed cell disrupting machines (e.g., GeneReady™, FastPrep-24™ Precellys™ 24, Power-Lyzer™ 24) or as long as 15 minutes when using lower speeds. See the manufacturer's literature for operating information.
4. **Centrifuge at >13,000 xg for 5 minutes and transfer 300 µL of the supernatant to a new 1.5 mL centrifuge tube.**
5. **Add 2 µL of RNase A solution (provided) to the sample tube, vortex to mix, and incubate for 2 minutes at room temperature.**
   - Alternatively, RNase A solution can be added at step 1 with Buffer SD1 without incubating times..
6. **Apply 100 µL of Buffer SD2 and 35 µL of Buffer SD3, and vortex for 5 seconds.**
7. **Centrifuge at >13,000 xg for 3 minutes and use 300 µL of supernatant as a sample at step 3 of the next section..**
   - Be careful not to co-transfer the debris.

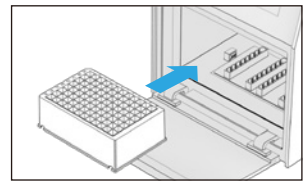
C-1. DNA extraction procedure (W7190, W7191)



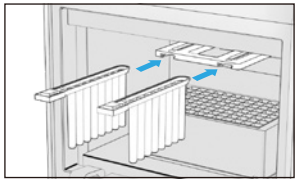
1. Carefully peel off the film of the 96-well Plate not to cross-contaminate.



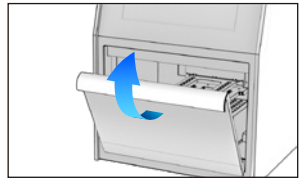
2. Add 300 µL of the sample into the each first well (#1,7)



3. Mount the 96-well Plate on the CLEO™ AP16 carefully.

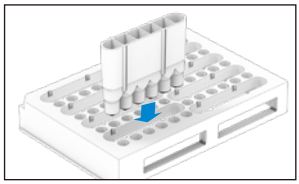


4. Insert a Plunger all the way into the socket above the 96-well Plate.

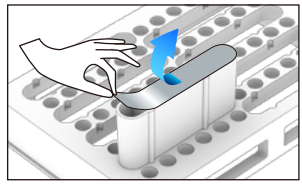


5. Close the front door of the instrument.

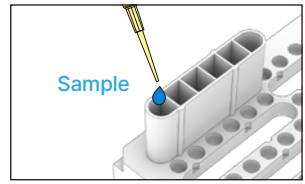
C-2. DNA extraction procedure (W7192, W7193)



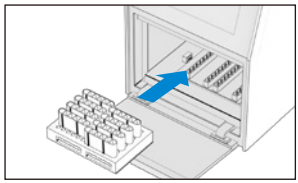
1. Mount the 6-well Strip onto the Strip Adapter Plate.



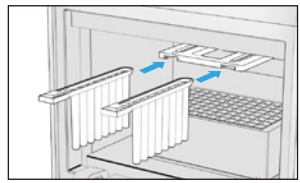
2. Carefully peel off the film of the 6-well Strip not to cross-contaminate.



3. Add 300 µL of the sample into the each first well (#1)



4. Mount the 6-well Strip Adapter Plate on the CLEO™ AP16 carefully.



5. Insert a Plunger all the way into the socket above the 96-well Plate.

6. Close the front door of the instrument.
7. Select **MENU** ▶ **DNA** ▶ **Soil DNA** on the screen.

8. Press **'RUN'** button on the screen.
9. After the alarm finishes, open the door and carefully remove the Plunger.
10. Detach the 96-well plate (or the Strip Adapter Plate) from the machine carefully.
11. Transfer the 50 - 60 µL eluate of each fifth well (#5,11) into a new 1.5 mL centrifuge tube.
    NOTE : The volume of eluate can be decreased slightly during the process.
12. Dispose of 96-well Plates (or 6-well Strip) and Plunger used in the test according to local or national waste disposal methods.

TROUBLE SHOOTING GUIDE

Problem	Possible causes	Recommendations
Low or no recovery	Starting sample is not fresh or improperly stored	DNA yield may be reduced if the sample is improperly stored or outdated. Use a freshly harvested sample.
	Low beating power	Low beating power can't properly disrupt the cell walls. Bead-beating should be carried out at maximum power on a conventional vortex machine. Please refer to the manufacturer's instruction manual for other disrupting machines.
Low purity	Co-transfer of debris	When transferring the sample mixture into the sample well, be careful not to co-transfer the debris of pellet. This will decrease the purity of DNA.
	Too much sample amount used	Do not overload the sample. Keep the maximum sample weight or cell number in the sample as a procedure.
Degraded DNA	Too much power for bead-beating	Too high speed or longer time for bead-beating can cause the degradation of DNA. It is recommended to follow the basic procedure for the first time and then optimize the speed and the time for the sample at the next preparation.
	Starting sample is not fresh or improperly stored	DNA can be degraded if the sample is improperly stored or outdated. Use a freshly harvested sample if possible.
Inconsistent recovery of DNA	Contamination between reagent wells	The reagent in the well may evaporate and form a deposit on the film during storage, which may cause contamination between wells when the film is removed. Prepacked plates or tubes always should be stored in proper condition. Before removing the film from the plate or the tube, it is recommended to shake off the deposit on the film while holding the plate or the tube tightly.

SYMBOL GLOSSARY

REF	Catalogue number		Manufacturer		Use-by date
LOT	Batch code		Do not re-use		Temperature limitation
RUO	Research use only		Instructions for use		Keep away from sunlight
Σ	Contents sufficient for <n> tests		Caution		Keep dry
	Do not use if package is damaged				

ORDERING INFORMATION

Product	Cat No.	Package	Note
WizMag™ Soil DNA	W7190	64 Prep	16 prep/run
	W7191	192 Prep	
	W7192	32 Prep	Single prep
	W7193	96 Prep	
CLEO™ AP16 Nucleic acid Extractor	CL2016	1 system	1-16 sample
CLEO™ AP48 Nucleic acid Extractor	CL2048	1 system	1-48 sample

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