



TANBead® Nucleic Acid Extraction Kit

Plant RNA Auto Plate

(For use with the Maelstrom 9600 series)

RUO

W6K3A46

(For Professional Use Only) V3

1. Intended Use

TANBead® Nucleic Acid Extraction Kit (W6K3A46) is suitable for isolating RNA from a wide range of plant species. Pretreated tissue samples can be processed through a series of extraction steps, which is operated by the magnetic bead-based technology of TANBead® Nucleic Acid Extractor (Maelstrom 9600 series). With the features of high quality and quantity, the purified extracts can be applied for downstream assays including real-time PCR and next generation sequencing.

2. Purpose

TANBead® Nucleic Acid Extraction Kit (W6K3A46) is employed in RNA isolation from a variety of plant tissues. After pretreatment and transferring of the sample, with automated nucleic acids extractor (Maelstrom 9600 series) your precious time will be saved and the isolation of RNA will be remarkably and sequencing. It is suitable for laboratories with high throughput requirement.

3. The basic principle

The silicon dioxide layer coated on the magnetic beads can adsorb the negatively charged molecules to purify nucleic acids from samples.

4. Specification

Starting Materials	30 – 50 mg plant tissue
Elution Volume	70-100 µL
DNA yield	2 - 5 µg
A260/A280	1.7 - 1.9

5. Component Supplied with the Kit

Auto Plate	5	Auto Plate with reagent buffers
96 Deep Well Plate	1	Auto Plate without reagent buffer
Lysis Buffer	90 mL	Guanidine salt, Tris buffer, surfactants
Elution Buffer	1.5 mL	Nuclease-Free Water
Spin tips	96 tips	Spin tip assembled box
Protocol	1	Instruction guide for user

6. Auto Plate Content and Plate Position

Plate Position	Buffer	Volume (µL)
1	Lysis Buffer	-
2	Washing Buffer 1	800
3	Magnetic Beads	800
4	Washing Buffer 2	800
5	Washing Buffer 2	800
6	Elution Buffer	100
7	N/A	N/A
8	Spin Tip	-

7. Kit Storage and Shelf Life

1) Components under room temperature (15 - 35°C) can be stored until the expiration date labeled on the box.

8. Precautions

- Avoid using expired reagents.
- Avoid vigorous shaking, in order to avoid excessive formation of foam.
- Carefully remove aluminum foil to avoid splashing.
- Do not expose the opened reagents or Auto Plates/ Auto Tubes to air. The evaporation would lead to pH change, or effect on the extraction effectiveness.
- Please check the integrity of the Auto Plate/ Auto Tube, and remember to mount the spin tips into the appropriate position of the suitable instrument before operating them.
- Please wear a mask and disposable gloves when handling.
- Use sterile consumables to avoid nuclease contamination.
- Reagent solution contains guanidine salt, avoid using bleach containing detergent.
- Avoid eyes, skin, and clothing contact with reagents. In case of any contact, flush with flowing water.

10) If any serious incident occurs, please report to the manufacturer and the competent authority of the member state in which the user and/or the patient is established.

9. Materials required, Not Supplied

- TANBead® Nucleic Acid Extraction System
Model: Maelstrom 9600 series (non-sterile)
- Disposable gloves
- Scissors, utility knives
- Micropipette, disposable tips (10 µL/ 200 µL/ 1000 µL)
- 1.5 mL microcentrifuge tube
- 15 mL / 50 mL conical tube

10. Sample Collection, Transportation, and Storage

■ Sample collection, transport, storage and pre-treatment

- For plant tissue (30 – 50 mg tissues)
 - Use liquid nitrogen to homogenize the samples.
 - Add **800 µl** Lysis Buffer to lysis the sample.
 - Mix well and stand for **10 minutes** on ice.
 - Centrifuge at **6000 RPM** for **5 minutes**.

■ Specimen transportation

Transportation of plant tissue specimen should follow specific plant transportation related law. Plant sample should be kept between 2 - 25°C during transportation.

11. Nucleic Acids Extraction Protocol

- Carefully remove the aluminum foil on the Auto Plates.
- Transfer **500 µl lysate and place 500 µl IPA into plate 1**.
- Push Auto Plates completely to the bottom of the plate rack. Make sure that the chamfer of the reagent plate faces toward the same direction.
- Select the program **"6K3"**. The parameters are given in following section.
- Carefully remove the Auto Plates when the program is finished.
- Use micropipette to transfer the purified nucleic acids from **plate 6** to a clean tube.
- Discard used Auto Plates and spin tips into the waste recycling bin.

12. Program

■ Maelstrom 9600

Program Name: 6K3								
Plate	1	2	3	4	5	6	7	8
Volume(µl)	800	800	800	800	800	100		
Keep Temp.	40	40	40	-	-	30		
Action	For.	For.	For.	For.	For.	For.		
Name	LB	WB1	MB	WB2	WB2	EB		TIP
Step	Plate	Temp. (°C)	Mixing (min)	Mixing (rpm)	Collect (sec)	Vapor (min)	Pause	
1	3	45	0.2	3000	30	0	OFF	
2	2	45	0.5	3000	30	0	OFF	
3	1	45	10	3000	30	0	OFF	
4	2	45	2	3000	30	0	OFF	
5	3	45	2	3000	30	0	OFF	
6	4	-	2	3000	30	0	OFF	
7	5	-	2	3000	30	10	OFF	
8	6	40	10	3000	60	0	OFF	
9	5	-	0.5	3000	0	0	OFF	

△ Temperature set as "0" represents room temperature!

■ **Maelstrom 9610**

Program Name: 6K3								
Plate	1	2	3	4	5	6	7	8
Volume(μL)	800	800	800	800	800	100		
Keep Temp.	40	40	40	-	-	30		
Action	For.	For.	For.	For.	For.	For.		
Name	LB	WB1	MB	WB2	WB2	EB		TIP
Step	Plate	Temp. (°C)	Mixing (min)	Mixing (rpm)	Collect (sec)	Vapor (min)	Pause	
1	3	45	0.2	3000	30	0	OFF	
2	2	45	0.5	3000	30	0	OFF	
3	1	45	10	3000	30	0	OFF	
4	2	45	2	3000	30	0	OFF	
5	3	45	2	3000	30	0	OFF	
6	4	-	2	3000	30	0	OFF	
7	5	-	2	3000	30	10	OFF	
8	6	40	10	3000	60	0	OFF	
9	5	-	0.5	3000	0	0	OFF	

△ Temperature set as “25” represents room temperature!

13. Result

Total nucleic acid yield and purity were detected using NanoDrop 2000 spectrophotometers: 2 – 5 μg RNA per test and the A260/A280 ratio of the nucleic acid is between 1.7 to 1.9.

14. Reagent performance

■ **Repeatability**

Under repeatability conditions where nucleic acids are extracted with the same reagent kit on the same source samples by the same operator. The coefficient of variation of nucleic acids extraction concentration is less than 5%.

■ **Reproducibility**

A five-day reproducibility test was carried out with the same source samples for 5 consecutive days with the same reagent kit by different operators. The coefficient of variation of nucleic acids extraction concentration is less than 5%.

■ **The stability of extracted RNA**

Storage Conditions	RNA stability
-80°C	Over 90 days
-20°C	28 days
4°C	14 days
25°C	2 days
Freeze-thaw	5 times

15. Explanation of Symbols

	Manufacturer		Consult instructions for use
	Temperature limit		Contains sufficient for test
	Research use only		Caution
	Catalogue number		Non-sterile
	Batch code		Protect from heat and radioactive sources
	Do not re-use		Use-by date
	Date of manufacture		