TANBead® Nucleic Acid Extraction Kit

Plant RNA Auto Tube

(For use with the SLA-16 / 32 / E13200 series)

RUO

6K3S46

(For Research Use Only) V3

1. Intended Use

TANBead® Nucleic Acid Extraction Kit (6K3S46) is suitable for isolating RNA from a wide range of plant species. Pretreated samples can be processed through a series of exaction steps, which is operated by the magnetic bead-based technology of TANBead® Nucleic Acid Extractor SLA-16/32, SLA-E13200. 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 (6K3S46) is employed in RNA isolation from a variety of plant samples. After pretreatment and transferring of the sample, with automated nucleic acids extractor, TANBead® Smart LabAssist, your precious time will be saved, and the isolation of RNA will be remarkably consistent. The isolated nucleic acids samples can be used in subsequent applications, such as real time PCR 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 sample
Elution Volume	70 – 100 µL
Typical RNA yield	Up to 5 µg

5. Component Supplied with the Kit

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Auto Tube	8 Trays	Auto Tube with reagent buffers
Lysis Buffer	90 mL x 1	Sodium salt, Tris buffer, surfactants
Elution Buffer	1.5 mL x 1	Nuclease-Free Water
Strip	24	8-channel strip
Base	2	A rack for 8 Auto Tubes
Protocol	1	Instruction guide for user

6. Auto Tube Content

Well	Buffer	Volume (µL)
1 / 7	-	-
2 / 8	Washing Buffer 1	800 µL
3 / 9	Magnetic Beads	800 µL
4 / 10	Washing Buffer 2	800 µL
5 / 11	Washing Buffer 2	800 µL
6 / 12	Elution Buffer	100 µL

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

1) For research use only.
2) Avoid using expired reagents.
3) When the temperature is below 20°C, place the Auto Tubes in an oven (preheated 42~60°C) 5 to 10 minutes.
4) Avoid vigorous shaking, in order to avoid excessive formation of foam.
5) Carefully remove aluminum foil to avoid splashing.
6) Do not expose the opened reagents or Auto Tubes to air. The evaporation would lead to pH change, or effect on the extraction effectiveness.
7) Please check the integrity of the Auto Tubes and remember to insert the strips into the appropriate position of the suitable instrument before operating them.
8) Please wear a mask and disposable gloves when handling.
9) Use sterile consumables to avoid nuclease contamination.
10) Reagent solution contains guanidine salt, avoid using bleach containing detergent.
11) Avoid eyes, skin, and clothing contact with reagents. In case of any contact, flush with flowing water.
12) 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.
13) The Washing Buffer 2 and Elution Buffer are colorless and transparent. Colored reagent may be due to the contamination, please replace it with a new one before use.

9. Materials required, Not Supplied

1) TANBead® Nucleic Acid Extraction System
   Model: SLA-16 / 32 / E13200 series (non-sterile)
2) Disposable gloves
3) Scissors, utility knives
4) Micropipette, disposable tips (10 µL / 200 µL / 1000 µL)
5) 1.5 mL microcentrifuge tube
6) 15 mL / 50 mL conical tube
7) IPA: Isopropanol for molecular biology
8) Liquid nitrogen

10. Sample Collection, Transportation, and Storage

■ **Sample collection and storage**

Freshly collected plant sample is suggested for use or stored it at -20 or -80°C for long-term conservation.

■ **Sample transportation**

Transportation of plant samples should follow specific plant transportation related law. Plant samples should be kept between 2 - 8°C during transportation.

11. Nucleic Acids Extraction Protocol

■ **Sample preparation**

1) Add **liquid nitrogen** to the sample and grind it.
2) Collect the sample and add **800 µL Lysis Buffer.**
3) Mix well and **stand for 10 minutes on ice**.
4) Centrifuge at **6000 RPM for 5 minutes** and take **450 uL** supernatant as the sample for the following step.

■ **Automatic process**

Before operating, turn on the warm-up system of TANBead® Nucleic Acid Extractor, if it is equipped with temperature controller, please setting at **45°C.**

1) Preparing the Assembled Auto Tubes by inserting Auto Tubes into the Base completely.
2) Carefully remove the aluminum foil from Auto Tube.
3) Transfer **450 µL supernatant** and add **450 µL IPA** into wells of column **#1/ #7.**
4) Place the Base with Auto Tubes completely to the bottom of plate rack. Make sure that the missing corner of the Base faces toward the door panel.
5) Push strips completely to the bottom of strip rack frame.
6) Close the door panel.
7) Select the program "**B10-W4-AUTO**" The steps are given in the following section.
8) Once the program has ended, take out the Auto Tube assemble carefully.
9) Use micropipette to transfer the purified nucleic acids from well of column **#6/ #12** to a clean tube.
10) Discard the used Auto Tube and Strips into the waste recovery bin.

12. Program

- **SLA-16 / 32 and SLA-E13200 series**

Program Name: B10-W4-AUTO						Model: SLA-16/ 32, SLA-E13200 series			
Step	Well	Temp (°C)	Mixing (M)	Collect (S)	Rod	Mixing speed	Volume (μL)	Pause	Vapor (M)
1	3	45	1	60	ON	Medium	800	OFF	0
2	2	45	1	60	ON	Medium	800	OFF	0
3	1	45	10	60	ON	Medium	800	OFF	0
4	2	45	2	60	ON	Medium	800	OFF	0
5	3	45	2	60	ON	Medium	800	OFF	0
6	4	45	2	60	ON	Medium	800	OFF	0
7	5	45	2	60	ON	Medium	800	OFF	10
8	6	45	10	120	ON	Medium	150	OFF	0
9	5	NA	1	0	OFF	Medium	800	OFF	0
10	0	NA	0	0	OFF	Medium	0	OFF	0

13. Result

Nucleic acid product purified by TANBead® nucleic acid extraction kit can perform qualitative / quantitative analysis of specific genes by PCR, RT-PCR, Q-PCR or qRT-PCR. Please refer to the molecular diagnostic kit manual.

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**
15°C 35°C	**Temperature limit**		**Contains sufficient for test**
REF	**Catalogue number**		**Caution**
LOT	**Batch code**	NON STERILE	**Non-sterile**
	Do not re-use		**Keep away from sunlight**
	Date of manufacture		**Use-by date**
RUO	**For research use only**		