TOOLS Air DNA & RNA Extraction Kit

Cat. no. TX-AT01

Storage: This product can be stored at room temperature for up to 24 months.

Product Size:

Contents	50 preps
Buffer AA	30 mL
Buffer AB	12 mL
Buffer AC	300 µL
Binding Gel	50 tubes

Introduction

The TOOLS Air DNA & RNA Extraction Kit is a fast, simple, and cost-effective buffer-based system for air extraction and purification of DNA and RNA collected from filter paper or devices. Simple centrifugation procedures enable complete removal of contaminants and enzyme inhibitors. The purified DNA and RNA are suitable for downstream applications.

Materials not provided

1-Bromo-3-chloropropane (BCP; CAS Number: 109-70-6)

TOOLS Proteinase K (Cat No. RTT-BD03) or other compatible reagents and lysozymes

Protocol

Sample preparation

1. Cut and mince the filter paper into four pieces. Place them into a 50-mL tube (the air-collecting side should face the center of the tube).

   Add ddH_2O or PBS to completely cover the papers, and incubate for 10 min.
2. Centrifuge at 15,000 rpm for 5 min, and remove as much ddH_2O as possible

   (the concentration of the remaining ddH_2O should not exceed 200 µL).
3. Add 500 µL of buffer AA to the tube, and vortex thoroughly for 60 s to resuspend the pellet.
4. Add 5 µL (20 mg/mL) of proteinase K and 5 µL of lysozyme (100 mg/mL) to the tube, vortex for 60 s, and then incubate for 1 h at 55 °C. Stir the contents of the tube through vortexing again for 20 s to ensure thorough mixing.

DNA and RNA extraction

1. Add 5 µL of proteinase K and 5 µL of lysozyme to the tube again.
   Vortex for 60 s and then incubate at 55 °C for 30 min.
2. Add 200 µL of BCP and 200 µL of buffer AB to the tube. Mix the sample by inverting the tube three times. Transfer all solutions to the binding gel tube and centrifuge (13,000 × g, 30 s before use).
3. Invert the binding gel tube three times (do not vortex), and then centrifuge (12,000–16,000 × g, 5 min).
4. Transfer the supernatant to a new microcentrifuge tube, and add 5 µL of buffer AC and 550 µL of isopropanol to the tube.
5. Invert the tube three times, and incubate at 37 °C for 10 min.
6. Centrifuge at 14,000 rpm for 5 min. Remove the supernatant.
7. Add 600 µL of 70% ethanol. Centrifuge at 14,000 rpm for 5 min. Remove the supernatant.
8. Air-dry and rehydrate the pellet by using 20–50 µL of TE buffer or ddH2O, adjusting the buffer volume by the pellet size.

The product is for research purposes only and not for diagnostic or clinical use.

Mince the filter paper into 4 pieces

Place the papers in tubes.
Rinse the papers with H2O or PBS.

centrifuge

Remove liquid from pellet

Resuspend pellet with buffer AA

Add proteinase K and lysozyme

Incubation at 55° C for 1hr

Add proteinase K and lysozyme

Incubation at 55° C for 30min

Add BCP and buffer AB

Transfer all the solution to Binding Gel tube

centrifuge

Transfer the aqueous phase to a new tube

Add isopropanol and buffer AC

centrifuge

Wash the pellet with 70% ethanol

centrifuge

Reconstitute DNA&RNA with TE buffer