TOOLS Water DNA & RNA Extraction Kit

Contents

Introduction

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

Kit Contents

Contents	TX-WT01 (50 preps)
Buffer TWA	30 ml
Buffer TWB	12 ml
Buffer TWC	300 µl
Binding Gel	50 tubes

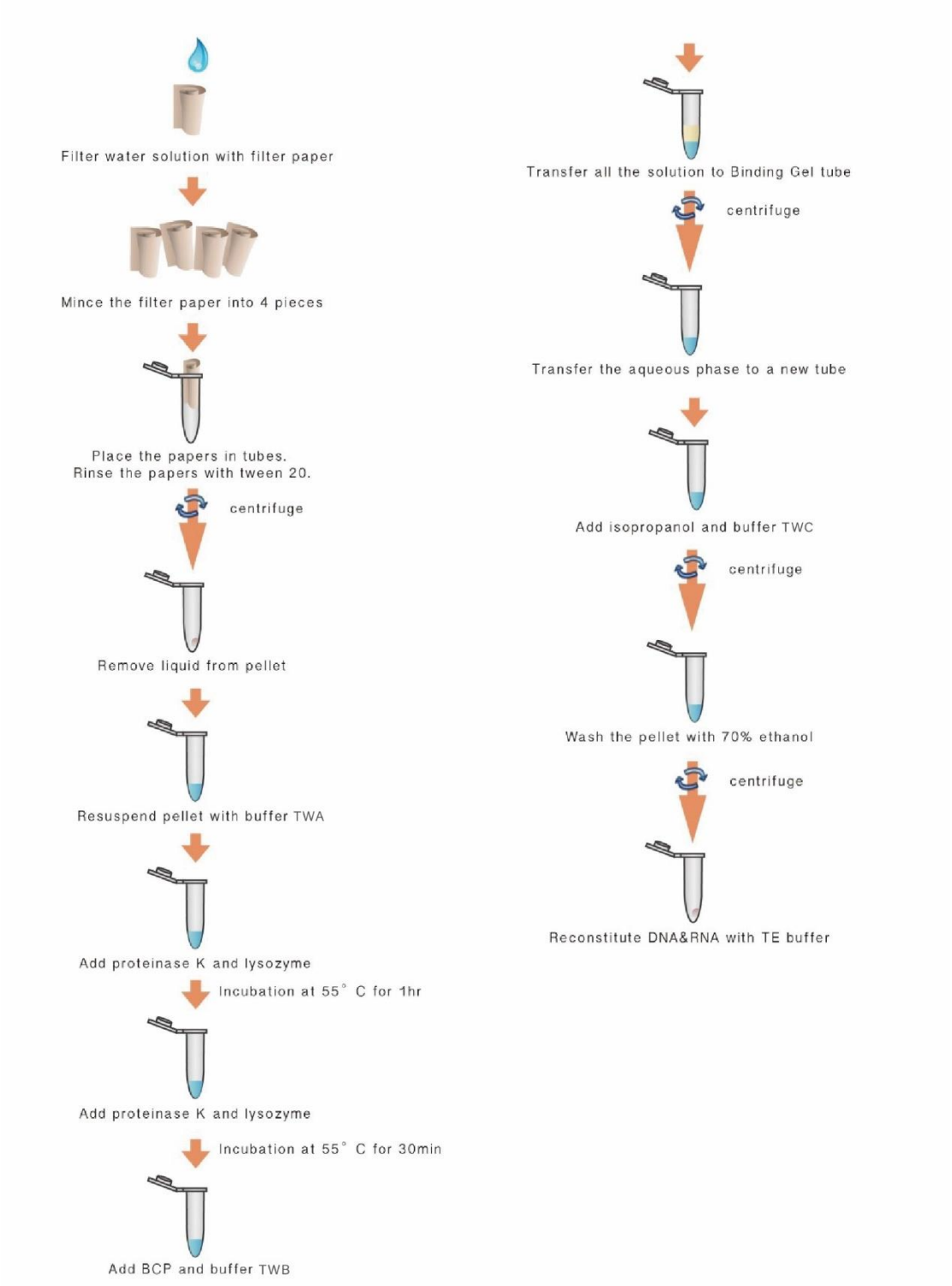
Storage

TOOLS Water DNA & RNA Extraction Kit can be stored at room temperature for up to 24 months

Materials not provided

1. 1-Bromo-3-chloropropane (BCP; CAS Number: 109-70-6).
2. TOOLS Proteinase K (Cat. No. RTT-BD03) or other compatible reagents and lysozyme.

Workflow


Filter water solution with filter paper
Mince the filter paper into 4 pieces
Place the papers in tubes.
Rinse the papers with tween 20.
centrifuge
Remove liquid from pellet
Resuspend pellet with buffer TWA
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 TWB
Transfer all the solution to Binding Gel tube
centrifuge
Transfer the aqueous phase to a new tube
Add isopropanol and buffer TWC
centrifuge
Wash the pellet with 70% ethanol
centrifuge
Reconstitute DNA&RNA with TE buffer

Protocol

Sample preparation

Collect 500 mL of aqueous solution and centrifuge at 1,000 rpm for 5 min. Carefully collect 450 mL from the tube and filter the solution through 0.22- or 0.45-μm filter paper (Millipore, Merck).

2. Cut the filter paper into four pieces and mince. Place the paper in a 50-mL tube (the air collecting side of the papers should face the center of the tube). Collect filtrate by rinsing the paper with 0.2% Tween-20 and shake the tube gently for 60 s to remove the filtrate from the paper.
3. Remove the paper from the tube, centrifuge at 14,000 rpm for 3 min, and remove as much liquid as possible.
4. Add 500 μL of Buffer TWA to the tube and vortex for 60 s to resuspend the pellet thoroughly.
5. Add 5 μL proteinase K (20 mg/mL) and 5 μL of lysozyme (100 mg/mL) to the tube, vortex for 60 s, and incubate for 1 h at 55 °C. Vortex the tube for 20 s to mix thoroughly.

DNA and RNA extraction

Add 5 μL of proteinase K and 5 μL of lysozyme to the tube. Vortex for 60 s and incubate at 55 °C for 30 min.

Add 200 μL of BCP and 200 μL of Buffer TWB to the tube and mix the sample by inverting the tube three times. Transfer all of the solution to the binding gel tube (centrifuge at 13,000 × *g*, 30 s before use).

3. Invert the binding gel tube three times (do not vortex) and centrifuge at 12,000–16,000 × *g*, 5 min.
4. Transfer supernatant to a new microcentrifuge tube and add 5 μL of Buffer TWC and 550 μL of isopropanol to the tube.
5. Invert the tube three times and incubate at 37 °C for 10 min.
6. Centrifuge 14,000 rpm for 5 min. Remove supernatant.
7. Add 600 μL of 70% ethanol. Centrifuge 14,000 rpm for 5 min. Remove supernatant.
8. Air dry the pellet and rehydrate it with 20–50 μL of TE buffer or ddH_2O.

(adjust buffer volume according to pellet size).

This product is for research only. Not for diagnostic or clinical use.