

Water RNA/DNA Purification Kit (0.22 µm or 0.45 µm)

Norgen's Water RNA/DNA Purification Kit provides a convenient and rapid method for the detection of microorganisms from environmental water samples. The kit allows for the rapid isolation and purification of total RNA and DNA simultaneously from the microorganisms found in different types of water samples. The total RNA and DNA (including genomic DNA) are isolated from all the microorganisms found in the water, including bacteria, fungi and algae without the use of any inhibitory organic substances. The microorganisms are captured by passing the water sample through either a 0.22 µm or a 0.45 µm filter, and are subsequently lysed using the provided Bead Tubes. Both the RNA and DNA are then column purified in under 45 minutes using a single column. The purified RNA and DNA are highly concentrated, and can be used directly in a number of downstream applications including real time PCR, reverse transcription PCR, Northern blotting, Southern blotting and sequencing reactions.



With Norgen's Water RNA/DNA Purification Kit, the purification is based on spin column chromatography using Norgen's proprietary resin as the separation matrix. Norgen's kit purifies all sizes of RNA, from large mRNA and ribosomal RNA down to microRNA (miRNA) and small interfering RNA (siRNA), without the use of phenol or chloroform. The purified RNA and genomic DNA are of the highest integrity, and can be used in a number of downstream applications.

Kit Specifications			
Minimum Water Input	10 mL	Maximum Filter Column Loading Volume	600 µL
Maximum Water Input	100 mL	Maximum Spin Column Loading Volume	100 µL
Elution Volume	100 µL	Time to Complete 10 Purifications	45 minutes

Water RNA/DNA Purification Kit Benefits

Rapid detection of microorganisms in water samples	Isolate total DNA and RNA from all microorganisms found in the water, including bacteria, fungi and algae.
Complete column purification	The RNA and DNA are both column purified simultaneously using the same column.
Different pore sizes of the filter columns available	The filter columns included with the kit are available in either 0.22 µm or 0.45 µm pore size, depending on your needs.
Fast and easy processing	Rapid spin column format allows for the isolation of both RNA and DNA in under 45 minutes.
Isolate highly concentrated RNA and DNA	The purified RNA and DNA is eluted in low volumes, allowing for the direct use of the nucleic acid in downstream applications

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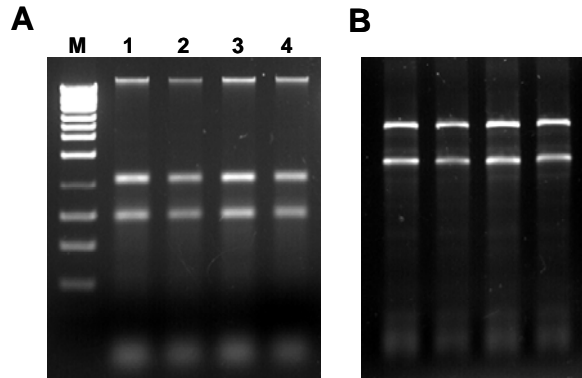


Figure 1. High Yield and Purity of RNA and DNA

Total RNA and DNA were isolated from a water sample using Norgen's Water RNA/DNA Purification Kit and subsequently run on gels for visual analysis. In Panel A 10 μL aliquots of the elution were run on a 1% TAE agarose gel, and in Panel B 5 μL aliquots of the elution were run on a 1.5% formaldehyde agarose gel. From observing the gels it can be seen that the kit allows for the isolation and purification of high yields of concentrated and high quality RNA and DNA.

Water RNA/DNA Purification Kit Contents

1. Lysis Solution
2. Nucleic Acid Wash Solution
3. Enzyme Incubation Buffer
4. Nucleic Acid Elution Buffer
5. Mini Spin columns
6. Filter Columns (0.22 μm or 0.45 μm)
7. **Bead Tubes**
8. Collection tubes
9. Elution tubes
10. Product Insert

Shipping Conditions

The Water RNA/DNA Purification Kit is shipped at room temperature.

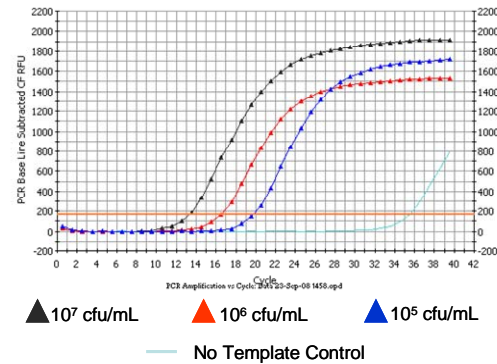


Figure 2. Detection of *E. coli* 16S rDNA by Real-Time PCR

E. coli was spiked into 50 mL water samples at increasing concentrations and the RNA and DNA were isolated using Norgen's Water RNA/DNA Purification Kit. The RNA/DNA elution was then used as the template in a real-time PCR reaction using *E. coli* 16S rDNA primers. The *E. coli* was successfully detected in all cases, indicating the high sensitivity of the kit for detecting microorganisms within the water.

Customer-Supplied Reagents and Equipment

- Vacuum apparatus
- Forceps
- Flat bed vortex or bead beater equipment
- Benchtop microcentrifuge
- 96 - 100% ethanol
- 70% ethanol
- Water bath or incubator heated to 65°C
- RNase-free microcentrifuge tubes

Storage Conditions

All solutions should be kept tightly sealed and stored at room temperature. All the reagents should remain stable for at least 1 year in their unopened containers.

Cat #	Description	Quantity
26400	Water RNA/DNA Purification Kit (0.22 μm)	25 preps
26450	Water RNA/DNA Purification Kit (0.45 μm)	25 preps