

RNA Preserve

Product # 17260, 17265

Product Insert

Description:

Norgen's RNA Preserve is a non-toxic liquid that stabilizes and protects cellular RNA in various samples including animal tissue, bacteria, soil, stool and plant. RNA Preserve is designed to stabilize total RNA for 2 days up to several weeks at room temperature depending on the sample type. RNA Preserve is added to the sample (see How to Use section below for the recommended ratio), and then the sample can be shipped safely or stored at room temperature without significant RNA degradation. Norgen's RNA Preserve is compatible with most of Norgen's RNA purification kits, providing high quality and integrity true total RNA for many downstream applications including RT-PCR and NGS.

Product Components

Component	Product # 17260	Product # 17265
RNA Preserve	50 mL	100 mL
Product Insert	1	1

Storage and Stability

Norgen's RNA Preserve can be stored at room temperature for up to 6 months. If precipitate is observed, warm at 37°C for 30 minutes.

Precautions and Disclaimers

This reagent is designed for research purposes only. It is not intended for human or diagnostic use. Ensure that a suitable lab coat, disposable gloves and protective goggles are worn when working with chemicals. For more information, please consult the appropriate Safety Data Sheets (MSDSs). These are available as convenient PDF files online at www.norgenbiotek.com.

RNA Preserve is known to react with bleach. Exercise caution if the sample you are working with contains bleach, including wearing proper protective equipment and working in a fume hood. Care must also be taken to properly dispose of any of this solution.

A. How to Use RNA Preserve

Amount of RNA Preserve to Use Based on Sample Type

- **Tissues:** Use RNA Preserve with fresh tissue only. Tissue samples must be cut to ≤ 0.5 cm in any single dimension. Add 5 volumes of RNA Preserve to the fresh tissue.
- **Bacteria, Fungi or Cultured Cells:** Add 1 mL of RNA Preserve to 1-1.5 million cells in a pellet (NOTE: growth or culture media must be removed prior to adding RNA preserve) and gently resuspend the pellet to mix RNA Preserve with the cells.
- **Soil:** Only fresh soil samples can be used. If soil is wet, remove the excess water/liquid prior to mixing with RNA Preserve. Add 400 μ L of RNA Preserve to 200 mg of soil (2:1 ratio).
- **Stool:** Only freshly collected stool can be used. Add 2 mL of RNA Preserve to 1 g of stool, or similar ratio for an alternative volume (2:1 ratio). Gently vortex until stool is thoroughly mixed with RNA Preserve.

- **Plant:** Fresh 0.7cm leaf disk (up to 6 disks) or similar size of plant tissue can be submerged in 1-2 mL of RNA Preserve. Due to the wax on the surface of the leaf, partially homogenized tissue (not from liquid nitrogen) also can be used to allow the RNA Preserve to penetrate the tissue easily.

Table 1: Recommended Sample Input Sizes and Amount of RNA Preserve to Add

Sample Type	Input Sample Size	Amount of RNA Preserve to Add
Animal Tissue	≤0.5 cm	5 volumes of the fresh sample
Stool	500 mg-1g	1-2 mL (2:1 ratio)
Soil	200 mg	400 μL (2:1 ratio)
Bacteria & Fungi	1-1.5 million cell in pellet	1 mL, resuspension
Cultured Cells	1-1.5 million cell in pellet	1 mL, resuspension
Plant	0.7 cm leaf disk (up to 6 disks) or similar volume	5 volumes of the fresh sample
Others	Follow the recommendations from a similar sample type	

B. Storage in RNA Preserve

Most samples in RNA Preserve can be stored at room temperature for 2 days up to several weeks according to the sample type, or at -20°C or -80°C indefinitely. Please see table below for details regarding sample storage for the different sample types.

If the sample is to be stored at -20°C or -80°C for long-term storage, first store the preserved sample at 4°C overnight to allow RNA Preserve to thoroughly penetrate the sample. The following day, remove the remaining RNA Preserve and then transfer the sample to -20°C or -80°C.

Table 2: RNA Preserve Performance for Different Sample Types in Various Storage Conditions

Sample Type	Storage Condition		
	Room Temperature*	4 °C	- 20°C & - 80°C
Animal Tissue	1 week	Up to 1 month	For archival samples
Stool	1 week		
Soil	2 week		
Bacteria & Fungi	2 weeks	Up to 1 month	For archival samples
Cultured Cells	1 week		
Plant	2-3 days		
Others	Follow the recommendations from a similar sample type		

* Storage duration at room temperature will vary depending on the sample condition and handling

C. RNA Isolation from Preserved Samples

Norgen's RNA Preserve is fully compatible with the Norgen RNA purification kits below. Please refer to the table below to determine if the RNA Preserve should be removed prior to purification of RNA.

Table 3: Recommended Norgen RNA Purification Kits

Sample Type	RNA Preserve Removal Required Prior to RNA Isolation?	Recommended Norgen RNA Purification Kit
Animal Tissue	Yes. Remove the tissue from the RNA Preserve	Total RNA Purification Kit
Stool	No	Stool Total RNA Purification Kit
Soil	Yes. Spin at 14,000 rpm for 1 minute and remove RNA Preserve by pipetting	Soil Total RNA Purification Kit
Bacteria & Fungi	Yes. Spin at 14,000 rpm for 1 minute and remove RNA Preserve by pipetting	Total RNA Purification Kit
Cultured Cells	Yes. Spin at 2,000 rpm for 3 minutes and remove RNA Preserve by pipetting	Total RNA Purification Kit
Plant	Yes. Remove the plant tissue from the RNA Preserve	Plant/Fungi Total RNA Purification Kit

Phenol/chloroform based RNA purification products such as TRIZOL® (or TRI Reagent) are also compatible with RNA Preserve.

D. Preservation Examples

Comparison of RNA Preservatives for Soil RNA Storage at Room Temperature

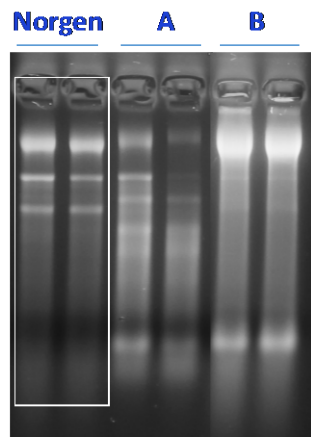


Figure 1. Soil RNA Preservation up to 2 weeks at Room Temperature using Norgen's RNA Preserve. Freshly collected 200 mg soil (clay) was mixed with 400 μ L of three different RNA preservatives (Norgen's RNA Preserve, Competitor A and Competitor B). Samples were then stored at room temperature for 2 weeks. Prior to RNA purification, the RNA preservative was removed by a short centrifugation step (5,000 rpm for 3 minutes). Next, RNA was purified from each sample using Norgen's Soil Total RNA Purification Kit (Cat. 27750). Purified total soil RNA was visualized on 1x MOPS RNA gel. Result indicated that Norgen's RNA Preserve could maintain the integrity of Soil RNA for 2 weeks of storage at room temperature.

High Plant RNA Integrity using RNA Preserve

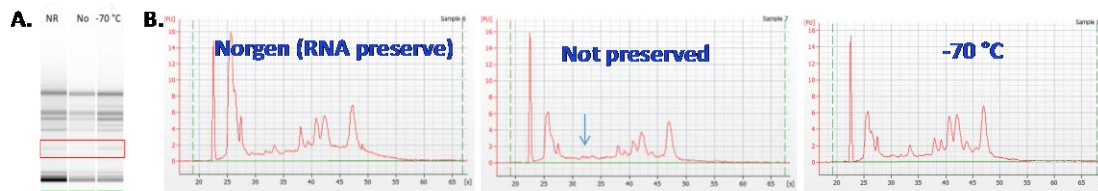


Figure 2. Plant RNA Stability after 2 Days Incubation at Room Temperature using Norgen's RNA Preserve. Six leaf disks (0.7 cm diameter) were stored at different storage conditions (in Norgen's RNA Preserve, not preserved and stored at room temperature, -70°C) for 2 days and total RNA was then purified using Norgen's Plant/Fungi Total RNA Purification Kit (Cat. 25800). The purified RNA was loaded onto a Nano RNA chip and analyzed in 2100 Expert (v. B.02.08.SI648, Agilent Technology). The RNA preserved in Norgen's RNA Preserve shows a similar RNA profile with the frozen method, indicating no changes in RNA stability at room temperature for 2 days with Norgen's RNA Preserve, while the not preserved samples start showing signs of degradation after 2 days (red box and arrow).

Related Products	Product #
Total RNA Purification Kit	17200, 37500, 17250
Stool Total RNA Purification Kit	49500
Soil Total RNA Purification Kit	27750
Plant/Fungi Total RNA Purification Kit	25800, 31350, 25850
RNA Clean-Up and Concentration Kit	23600, 43200, 25100
RNA Clean-Up and Concentration Micro-Elute Kit	61000

Technical Support

Contact our Technical Support Team between the hours of 8:30 and 5:30 (Eastern Standard Time) at (905) 227-8848 or Toll Free at 1-866-667-4362.

Technical support can also be obtained from our website (www.norgenbiotek.com) or through email at techsupport@norgenbiotek.com.

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