



ZYMO RESEARCH
The Beauty of Science is to Make Things Simple

Preserving Biological Samples is Valuable

DNA/RNA Shield™

Nucleic Acid Stabilization Without Cold Chain



Hydraflock Swab



Swab



Screwcap Scoop



Stool



Ultra High-Density Beads



Tissue



Blood



Saliva



Urine



Prefilled Devices, Bulk Reagent, & Customs Fills Available



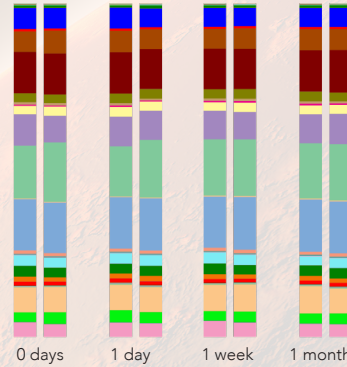
Transport Any Sample, Anywhere

DNA/RNA Shield™ preserves the genetic integrity of a sample at point of collection for sensitive downstream analyses (i.e., Next-Gen Sequencing, RT-PCR, etc.). Any sample type can be stored in DNA/RNA Shield™ for transport at ambient temperature, even in the most extreme conditions.

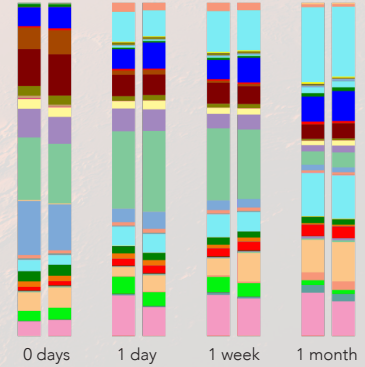
Scientists at NASA are utilizing DNA/RNA Shield™ to collect biological specimens from astronauts to assess how the human microbiome is affected by a microgravity environment. DNA/RNA Shield™ serves a vital role in preserving the genetic profiles of their samples in ever-changing and uncontrollable conditions.



With DNA/RNA Shield™ -
Accurate Composition



Without preservative -
Composition Changes



Microbial composition of stool is unchanged after one month at ambient temperature with DNA/RNA Shield™. The extracted DNA was subjected to microbial composition profiling via 16S rRNA gene targeted sequencing.

Safety at All Levels

DNA/RNA Shield™ lyses and effectively inactivates pathogens in a sample. This includes tough-to-lyse microbes or viruses without the need for additional steps, such as heat-treatment, homogenization, or alcohol sterilization.

DNA/RNA Shield™ has been rigorously tested to ensure its capability to inactivate even the toughest of viruses. In an independent study, the virucidal activity was shown to inactivate murine parvovirus.¹ DNA/RNA Shield™ abides by the Center for Disease Control's (CDC) guidelines for pathogen inactivation.²



BY

Eurovir® Hygiene-Labor
Antivirale Validierung & Rabies



Transport



Handling



Processing

Bacteria

B. subtilis, *E. faecalis*, *E. coli*, *L. fermentum*, *L. monocytogenes*, *M. tuberculosis*, *P. aeruginosa*, *S. enterica*, *S. aureus*, *S. pneumoniae*, *X. fastidiosa*

Viruses

Parvovirus, *Chikungunya Virus*, *Dengue Virus*, *Ebola Virus*, *Herpes Simplex Virus-1*, *Herpes Simplex Virus-2*, *Influenza A*, *Rhinovirus*, *MERS-coronavirus*, *West Nile Virus*

Yeast & Eukaryotes

C. albicans, *C. neoformans*, *S. cerevisiae*, *P. malariae*

1. Dr. Thraenhart and Dr. Jursch Virucidal activity of the nucleic acid preservation product "DNA/RNA Shield™" against the murine parvovirus (MVM) at 20 °C.
2. Guidance on the inactivation or removal of select agents and toxins for future use. Center for Disease Control (CDC)

Peace of Mind

Protect Samples From Freeze-Thaw Degradation

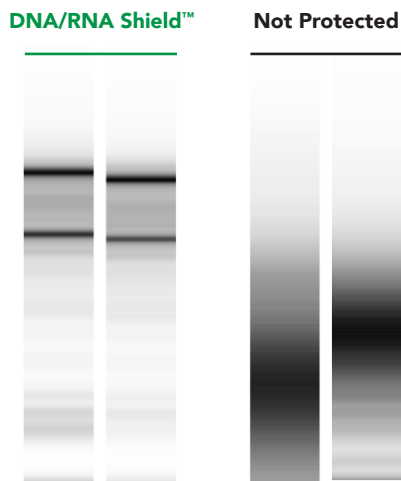
Today's most common practice for storing biological specimen, whether it be short or long-term, is the use of freezers. Unfortunately, freezers are not impervious to failing for a number of reasons - more notably mechanical failure and power outages.

DNA/RNA Shield™ provides peace of mind to scientists, as it preserves the genetic integrity even under stressful freeze-thaw cycles, ensuring that precious samples will not be lost due to such events. DNA/RNA Shield™ can be purchased as a bulk liquid reagent, in pre-filled devices, and ordered in custom filled devices to meet any user's need.

Add DNA/RNA Shield™ Reagent to Already Frozen or Fresh Samples & Prevent Degradation

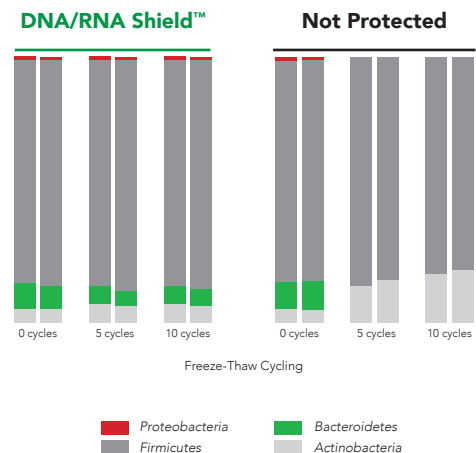


Frozen Blood RNA



High-quality RNA from blood stored in DNA/RNA Shield™ that was freeze-thawed from -80°C to room temperature.¹

Frozen Stool DNA



High-quality DNA from stool stored in DNA/RNA Shield™ after up to 10 freeze-thaw cycles. Microbial composition profiling via 16S rRNA gene targeted sequencing.

DID YOU KNOW?

One of the world's largest repositories of autism brain samples suffered a freezer failure in its tissue bank, losing a third of its samples. Researchers reported at the time that the priceless collection took over 14 years to collect and could set autism research back by a decade².

1. Whole blood samples +/- DNA/RNA Shield™ were subjected to > 2 freeze thaw cycles. Total RNA was subsequently purified using the Quick-RNA™ Whole Blood Miniprep Kit.
2. Weintraub, Karen. (2012, June 11). "Freezer failure at brain bank hampers autism research". *The Boston Globe*.

Applications

Viruses

Detection & Surveillance

Shaman, Jeffrey, et al. "Asymptomatic summertime shedding of respiratory viruses." *The Journal of infectious diseases*. 2018.

Next-Gen Sequencing

Dornfeld, Dominik, et al. "SMARCA2-regulated host cell factors are required for MxA restriction of influenza A viruses." *Nature Scientific reports*. 2018

Clinical & Diagnostics

Micro-RNA Biomarkers

Wu, Chung Wah, et al. "Novel approach to fecal occult blood testing by assay of erythrocyte-specific microRNA markers." *Digestive diseases and sciences*. 2017

Cell & Molecular

Biochemical Engineering

DeLorenzo, D. M., & Moon, T. S. Selection of stable reference genes for RT-qPCR in *Rhodococcus opacus* PD630. *Nature Scientific reports*. 2018

Stem cells

Paffhausen, Emily S., et al. "Discovery of a stem-like multipotent cell fate." *American Journal of Stem Cells*. 2018

Microbiomics

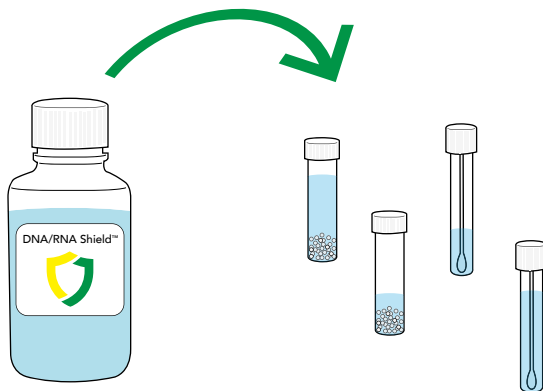
NASA

McAdam, Amy, et al. "Studies of Young Hawai'ian Lava Tubes: Implications for Planetary Habitability and Human Exploration." (2017).

Health

Lyons, Jesse, et al. "The colonic epithelium plays an active role in promoting colitis by shaping the tissue cytokine profile." *PLoS Biology*. 2018.

Custom Fills Available: Any Device. Any Volume.



Contact us with any custom fill requests at [oemorders@zymoresearch.com](mailto: OEMORDERS@ZYMORESEARCH.COM)

Product	Cat. No.	Size
DNA/RNA Shield™ - Fecal Collection Tube	R1101	10 pack
DNA/RNA Shield™ Collection Tube	R1102	50 pack
DNA/RNA Shield™ Lysis Tube (Microbe)	R1103	50 pack
DNA/RNA Shield™ Lysis Tube (Microbe) w/ Swab	R1104	50 pack
DNA/RNA Shield™ Lysis Tube (Tissue)	R1105	50 pack


Product	Cat. No.	Size
DNA/RNA Shield™ Collection Tube w/ Swab (1 ml fill)	R1106 R1107	10 pack 50 pack
DNA/RNA Shield™ Collection Tube w/ Swab (2 ml fill)	R1108 R1109	10 pack 50 pack
Urine Collection Kit w/ Urine Conditioning Buffer	D3062	10 pack
DNA/RNA Shield™ - Blood Collection Tube	R1150	50 pack
DNA/RNA Shield™ Saliva Collection Kit	R1210	1 unit



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