DNA/RNA Shield™

ZYMO RESEARCH
The Beauty of Science is to Make Things Simple®

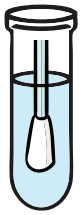
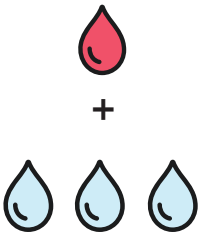
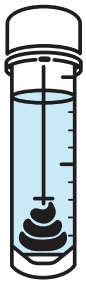
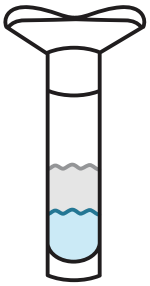
LUBIO SCIENCE
Part of Europa Biosite

Catalog Nos:
R1100-50 (50 ml)
R1100-250 (250 ml)
R1200-25 (25 ml) 2X concentrate
R1200-125 (125 ml) 2X concentrate

Storage: Reagent stable -80°C to 70°C.

Shelf Life: Prior to use, stable at room temperature for at least 60 months.

Stabilize DNA & RNA in Any Biological Sample

Swabs/Solids	Liquids	Feces	Saliva
			
Submerge	1:3 volumes	1:9 volumes	1:1 volumes*

For larger amounts of sample, scale proportionately. See the backside for more detailed recommendations.
*2X concentrate.

Ship & Store At Ambient Temperature

No cold-chain or dry-ice needed!

Temperature	Time
Frozen (-20°C/-80°C)	Indefinite
Ambient (4°C / 30 °C)	Minimum 30 days
Elevated (>35 °C)	Up to 7 days

Samples are stabilized at the time of collection to analysis.

Product Description

DNA/RNA Shield™ reagent is a DNA and RNA stabilization solution for nucleic acids in any biological sample. This DNA and RNA stabilization solution preserves the genetic integrity and expression profiles of samples at ambient temperatures and completely inactivates infectious agents (viruses, bacteria, fungi, & parasites). The unique DNA and RNA stabilization solution also prevents degradation from freeze-thaw cycling and unexpected freezer failures.

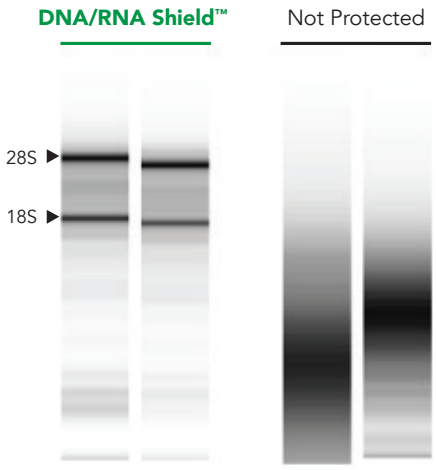
DNA/RNA Purification

DNA/RNA can be isolated directly without sample precipitation or reagent removal. Samples in DNA/RNA Shield™ are directly compatible with:

- All Zymo Research Purification Kits.
- Most kits and workflows from Qiagen, Roche, Thermo-Fisher, Macherey Nagel, etc.
- High-throughput automated workflows from Hamilton, Tecan, bioMérieux, PerkinElmer, Eppendorf, Promega, etc.

Protection from Freeze-thaw Damage

DNA/RNA Shield™ is not only beneficial for sample transport but also for the long-term storage of biological samples. DNA/RNA Shield™ protects DNA/RNA from multiple freeze-thaw cycles, even in the most complex of samples (i.e., whole blood).



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

Pathogen Inactivation

Validated inactivated organisms by various research groups:

Bacteria	Viruses	Yeast & Eukaryotes
B. subtilis	Monkeypox virus	*C. albicans*
E. faecalis	SARS-CoV-2	*C. neoformans*
E. coli	Parvovirus	*S. cerevisiae*
L. fermentum	Chikungunya virus	*P. malariae*
L. monocytogenes	Dengue virus	
M. tuberculosis	Ebolavirus	
P. aeruginosa	Herpes Simplex Virus-1	
S. enterica	Herpes Simplex Virus-2	
S. aureus	Human Immunodeficiency Virus	
S. pneumoniae	Influenza A	
X. fastidiosa	Rhinovirus	
	MERS-coronavirus	
	West Nile virus	

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Antivirale Validierung & Rabies

DNA/RNA Shield™ Volume Recommendations

Sample Type		Volume or Weight of Sample	Recommended Volume and Concentration of DNA/RNA Shield™
Cells	Bacteria	≤ 10^9 cells	800 µL (1X)
	Yeast	≤ 10^8 cells	
	Mammalian	≤ 10^9 cells	
Animal Tissue	High-yield (spleen, liver)	≤ 25 mg	600 µL (1X)
	Low-yield (brain, heart, muscle, lung, intestine, kidney)	≤ 50 mg	
Plant and Insect Tissue	Plant/Seed	≤ 150 mg	800 µL (1X)
	Insect	≤ 250 mg	
Blood and Plasma	Mammalian	100 µL	300 µL (1X)
	Rodent		500 µL (1X)
	Avian/Reptile	50 µL	1 mL (1X)
Blood Cells	PBMCs	Pelleted cells from ≤ 5 mL of blood (1-3 x 10^6 cells/mL)	300 µL (1X)
	WBCs		
Bodily Fluids	CSF, Milk	200 µL	200 µL (2X) or 600 µL (1X)
	Saliva, Buccal Rinse		
	Urine	Pelleted cells from ≤ 40 mL*	300 µL (1X)
Fecal/Soil		≤ 100 mg	800 µL (1X)
Swab		Enough to submerge sample (1X)	

For larger amounts of sample, scale ratios proportionately.
*Recommendation for healthy donors.

Frequently Asked Questions

Can I still use the reagent if a precipitate has formed?
This can happen on occasion due to transport or storage at lower temperatures. The reagent functionality is not affected; however, the precipitate can be resolved by heating the reagent >37 °C.

What downstream applications are compatible with the DNA/RNA Shield™?
DNA & RNA stored in the reagent are intended for nucleic acid-based applications such as Next-Gen Sequencing, qPCR, microarray, etc. Other applications such as proteomics and metabolomics have not been validated.

What type of analyses can be performed on samples stabilized in DNA/RNA Shield™?
DNA/RNA Shield preserves nucleic acids in biological samples at room temperature and is the best option for an unbiased RNA and DNA downstream analysis, making it ideal for Next-Generation Sequencing (NGS), qPCR, microarray, and proteomics, among others. Proteins (denatured) can be analyzed by most downstream applications upon dilution.

Do tissues need to be homogenized before transport and storage?
It is generally recommended to collect tissue samples no greater than 5 mm in any single direction. Samples can be homogenized at any point.

DNA/RNA Shield™ appears to have a yellow-brown tint. Is this normal?
The appearance of the reagent is normally clear to yellow/brownish in tint. The tint does not affect the performance of the reagent.

Can I remove tissue or cells stored in DNA/RNA Shield™?
No. Biological samples are lysed and nucleic acids are stabilized in the reagent. Prior to processing, we recommend clearing the lysate and removing debris by centrifugation.

How do I dispose of samples collected in DNA/RNA Shield™?
Sample disposal is dependent on the collected biological specimen. Please dispose of contents/container in accordance with local/regional/national/international regulations.

Can DNA/RNA Shield™ be used to store extracted DNA and/or RNA?
Yes, all nucleic acids are stabilized in DNA/RNA Shield™. Prior to downstream applications, clean-up the sample via the appropriate Zymo Research clean-up kit Genomic DNA Clean and Concentrator (D4010), DNA Clean and Concentrator (D4013), and RNA Clean and Concentrator (R1013). Alternatively, make use of the DNA/RNA Shield Dry Transport Kit (R1141) for transporting purified nucleic acids.

Is DNA/RNA Shield™ compatible with bleach (sodium hypochlorite)?
Avoid mixing the reagent and bleach (sodium hypochlorite) or other strong oxidizing agents and acids. Clean up any accidental spills with water first.

DNA/RNA Shield™ Collection Devices

Product	Cat No.	Description	Recommended Processing
Fecal Collection Tube	R1101-E, R1101, R1137	For the direct collection of up to 1 gram or 1 mL stool.	ZymoBIOMICS™ DNA/RNA D4301 (spin-column); D4502 (magbead)
Bunny Wipe™ Fecal Sample Collector	R1133, R1138	Convenient and simple fecal collection device for at-home fecal sample collection.	
Collection tube w/swab	R1106, R1107-E, R1107, R1108, R1109-E, R1109	12 x 80 mm self-centering screwcap container with a sterile swab for specimen collection.	*Quick*-DNA/RNA™ Plus D7001 (spin-column); R2130 (magbead)
SafeCollect Swab Kit	R1160-E, R1160, R1161-E, R1161	At-home self-collection swab device and a sterile swab for specimen collection.	
SafeCollect Saliva Kit	R1211-E, R1211	At-home self-collection saliva tube with funnel for the direct collection of 2 mL saliva.	
Lysis tubes	R1102, R1103, R1104, R1105	2 ml screw-cap tube with Bashing Beads for the collection and homogenization of tissues, microbes, and pathogens.	
Blood collection tube	R1150	16 x 100 mm evacuated blood tube for the direct collection of 3 mL whole-blood.	*Quick*-DNA/RNA™ Blood Tube R1151 (spin-column); R2130 (magbead)

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