

DNA/RNA Shield

For Safe, Rapid, Effective
COVID-19 Surveillance



Highlights

Immediate Pathogen Inactivation

(virus, bacteria, fungus, parasites)

Protect RNA at room temp. > 30 days

Protect DNA at room temp. for years

(cold-free)

Compatible with most DNA/RNA purification Platforms

(no reagent removal, universally compatible, automatable)

Regulatory Certifications



Class I, #20200003



Class I exempt, #3014173039



CE-IVD, Annex III
Self Declaration Directive 98/79/EC



EN 14476:2017



Class I, #81742570001



Certified for in-flight use
(ISS, SpaceX, and Human Research Program
in Space)



The following viruses have been tested for complete inactivation.

MERS – coronavirus

influenza

west nile virus

ebola

HIV

HSV 1 & 2

chikungunya

dengue

rhinovirus

Parvovirus

Inactivation of Toughest known Viruses

“Parvovirus is resistant to acids, bases, solvents and temperature up to 50 °C”

Conclusion: No residual test virus was detected after exposure to DNA/RNA Shield

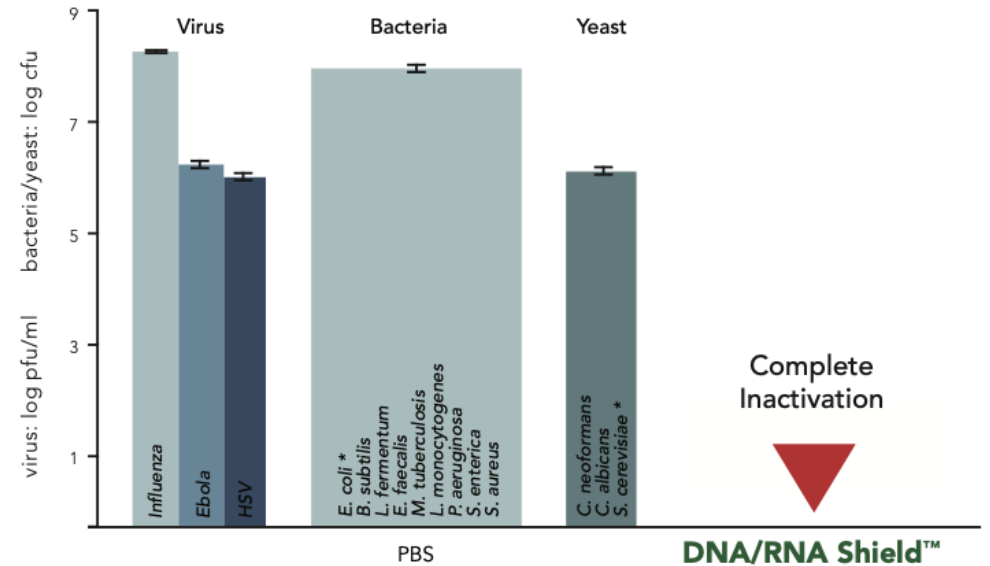
Eurovir® EN 14476:2017

Microbial Inactivation

Used by scientists around the world for:

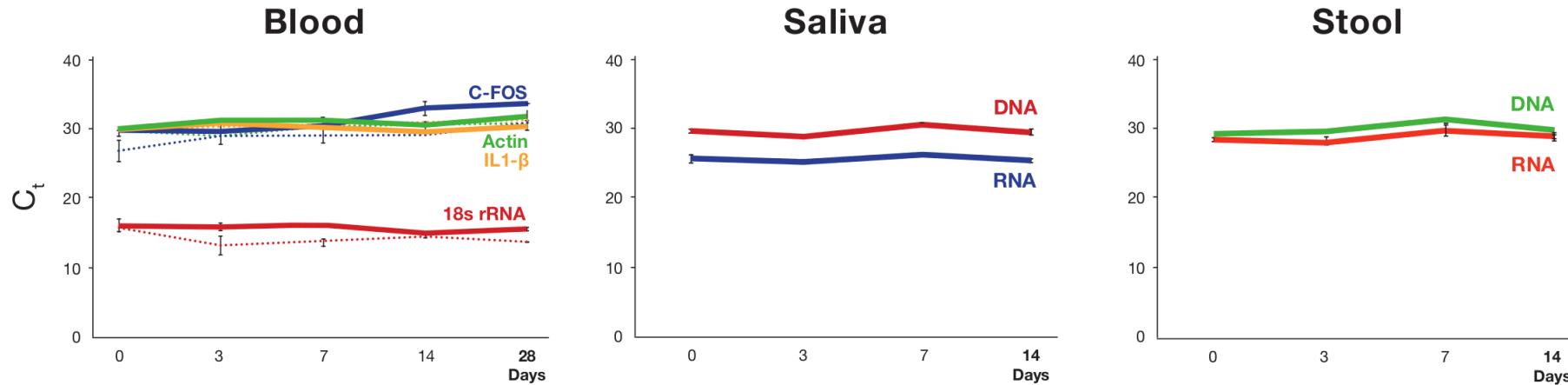
Bacteria	Viruses	Yeast & Eukaryotes
<i>B. subtilis</i>	Parvovirus	<i>C. albicans</i>
<i>E. faecalis</i>	Chikungunya Virus	<i>C. neoformans</i>
<i>E. coli</i>	Dengue Virus	<i>S. cerevisiae</i>
<i>L. fermentum</i>	Ebolavirus	<i>P. malariae</i>
<i>L. monocytogenes</i>	Herpes Simplex Virus-1	
<i>M. tuberculosis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

Microbial and viral inactivation

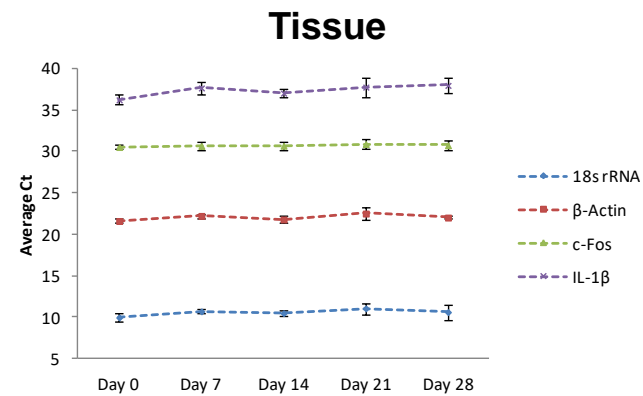
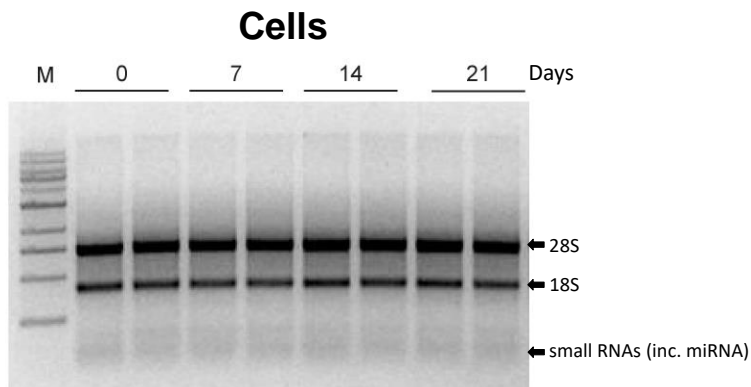


Samples containing the infectious agent (virus, bacteria, yeast) were treated for 5 minutes with DNA/RNA Shield™ or mock (PBS). Titer (PFU) was subsequently determined by plaque assay.

DNA & RNA Stabilization

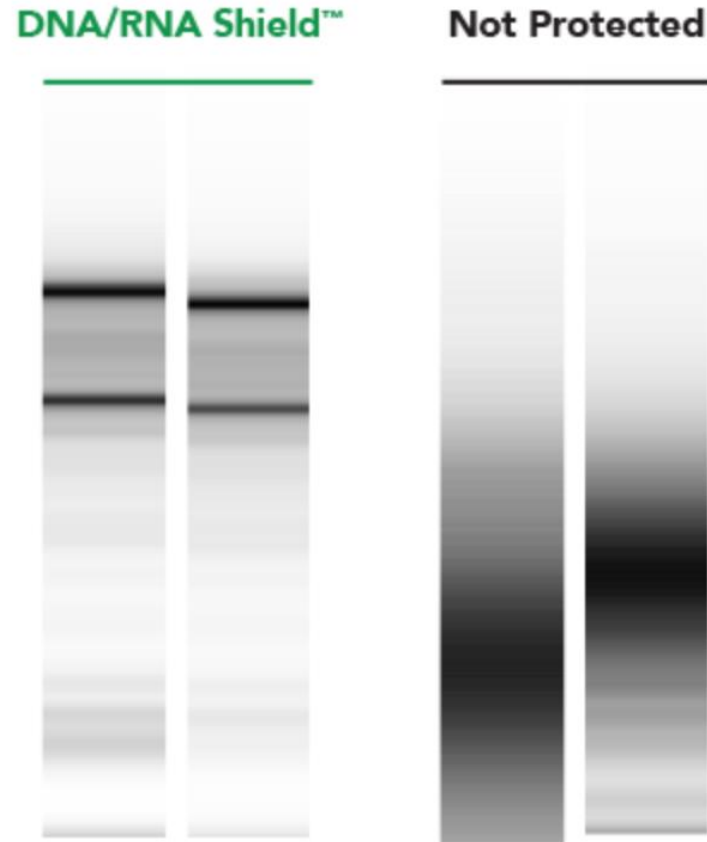


Nucleic acids from blood, saliva and stool are effectively stabilized in DNA/RNA Shield™ at ambient temperature. Graphs show: cellular RNA from human whole blood and spike-in DNA and RNA controls from saliva and stool purified at the indicated time points and analyzed by (RT)qPCR. Controls: HSV-1 and HIV (AcroMetrix, Life Technologies).

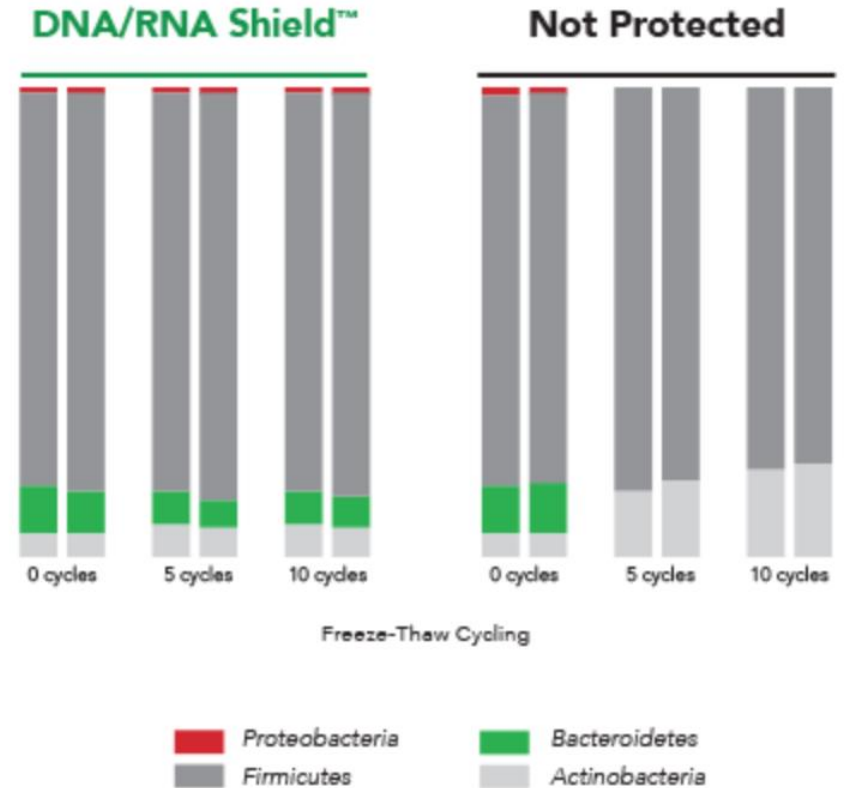


RNA from cells and tissue is effectively stabilized in DNA/RNA Shield™ at ambient temperature. Data show RNA from human cells and tissue purified at the indicated time points and visualized on agarose gel (HCT 116) or analyzed by (RT)qPCR (muscle tissue).

Stability w/ Repeated Freeze/Thawing



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



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.

DNA/RNA Shield™

Commercial Testing Labs Ordering >100 liters



At-home Collection



At-home Collection



Government and Institutions



DNA/RNA Shield™

Academic

Over 250 Citations...

Available Formats



Screwcap Scoop



Stool



Hydriflock Swab



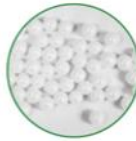
Swab



Blood



Ultra High-Density Beads



Tissue



Saliva



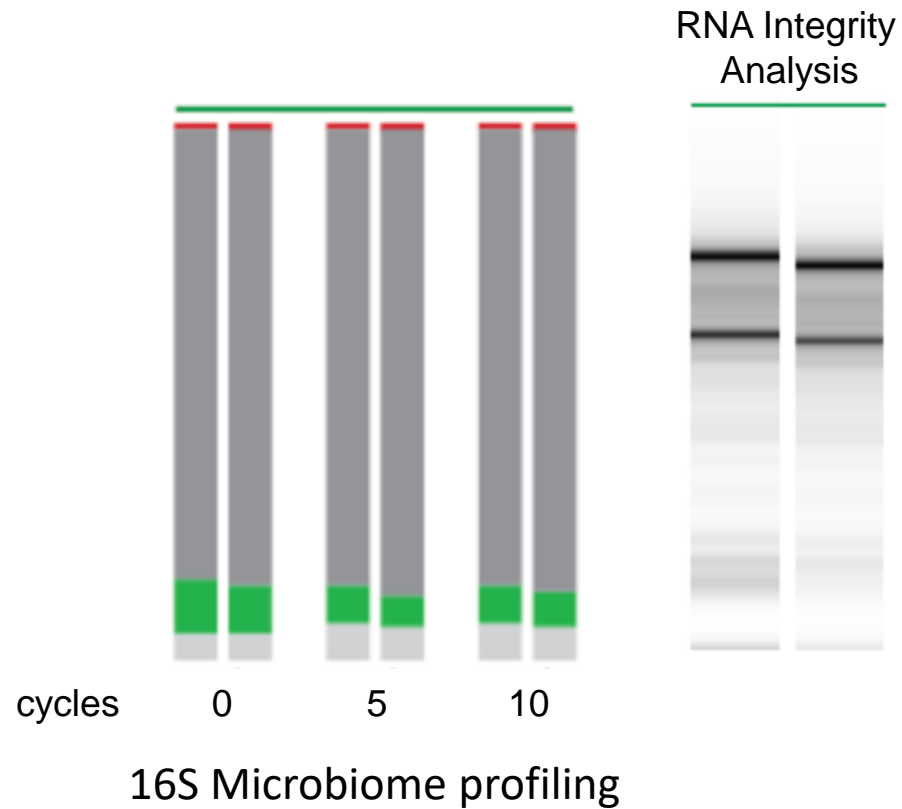
Urine

DNA/RNA Shield™

Supplemental Data

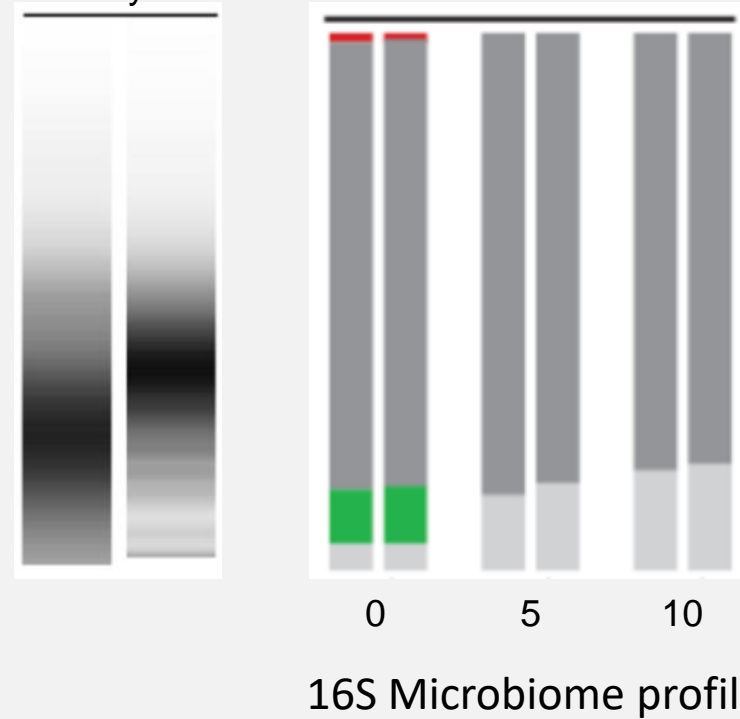
RNA Protection against Freeze/Thaw

DNA/RNA Shield



UTM (VTM), M5 etc.

RNA Integrity Analysis



cold chain required
freeze-thaw damage

Conclusion: Shield protects DNA and RNA against multiple freeze/thaw effects. UTM did not protect DNA and RNA.

Scientific Citations using DNA/RNA Shield™ for SARS, Coronavirus, and other viruses and pathogens:

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18. Galanti, Marta, et al. "Longitudinal active sampling for respiratory viral infections across age groups." *Influenza and Other Respiratory Viruses* 13.3 (2019): 226-232.
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Cont.

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DNA/RNA Shield™

Shield was deployed in the first emergency response for Wuhan outbreak

READY TO HELP - Zymo Research Corporation's (China Branch) donates scientific reagents to a hospital in Wuhan as "Reagents for combating virus pneumonia" in an effort to thwart the coronavirus outbreak in that region.

[#coronavirus](#) [#outbreak](#) [#virus](#) [#wuhan](#)

