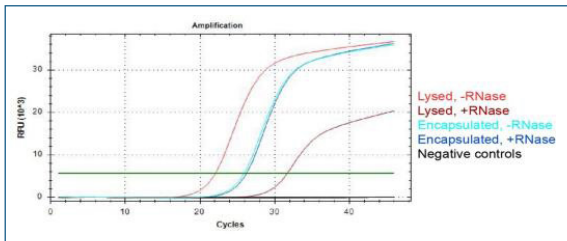


# VariSafe™ RNA

Working with infectious viruses and foreign animal disease agents can be challenging and hazardous.

VariSafe RNA products offer a safe and stable option when native RNA samples originate from biohazardous sources, are unstable, or are otherwise hard to obtain.

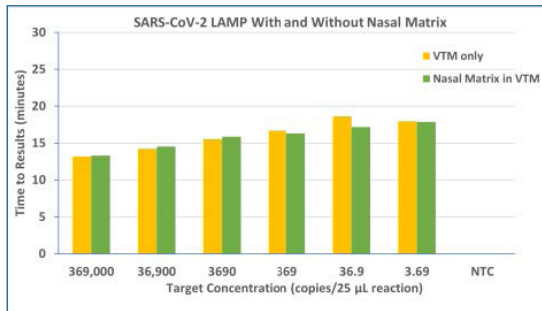
VariSafe RNAs are ideal internal or process controls for the development and optimization of diagnostic assays:



## Nuclease Resistant

Protection of VariSafe RNA from nuclease degradation in a real-time TaqMan RT-PCR assay.

[Read more...](#)



## Matrix Resistant

Direct detection of SARS-CoV-2 in viral transport medium (VTM) and VTM-containing nasal matrix.

[Read more...](#)

- Protect target RNAs of up to 1.5 kb from degradation by ubiquitous nucleases
- Safe and stable substitute for biohazardous, unstable, or hard-to-obtain native RNA samples
- Non-infectious MS2 phage-like particles, BSL I
- Glycerol-free (can be lyophilized as part of a complete reaction formulation)
- Stable at 4 °C for over 1 year
  - Spike matrices (e.g., blood, urine)
  - Calibrate sensitivity and specificity of an assay
  - A control in next-generation sequencing applications

Varizymes also offers a [variety of encapsulated RNA controls for common targets](#), and we would love to work with you to develop a unique control to suit your needs. For more information visit [www.varizymes.com](http://www.varizymes.com) or email [info@varizymes.com](mailto:info@varizymes.com).

## VariSafe RNA

Catalog Nos.: 1001, 1002, 1101, 1106, and 1201

Expressed in: *E. coli*

Contents: VariSafe RNAs are provided at a concentration of either 1E4 (PN: XXXXS) or 1E7 copies/ $\mu$ L (PN:XXXXL).

Item	Product number	Amount (copies of target sequence)
SARS-CoV-2 (Wuhan-Hu-1) N gene	1001S	1E6
SARS-CoV-2 (Wuhan-Hu-1) N gene	1001L	1E10
SARS-CoV-2 (Wuhan-Hu-1) N gene with human RNase P gene (RPP30)	1002S	1E6
SARS-CoV-2 (Wuhan-Hu-1) N gene with human RNase P gene (RPP30)	1002L	1E10
FMDV polyprotein (consensus)	1101S	1E6
FMDV polyprotein (consensus)	1101L	1E10
FMDV polyprotein (consensus) with <i>Bos taurus</i> 18S rDNA	1106S	1E6
FMDV polyprotein (consensus) with <i>Bos taurus</i> 18S rDNA	1106L	1E10
HIV-1 gag gene	1201S	1E6
HIV-1 gag gene	1201L	1E10
Custom sequence, up to 1500 nt	12XX	$\geq$ 1E12

See below for information about the sequences in each VariSafe RNA.

### Background

VariSafe RNAs are nuclease-resistant, single-stranded RNAs, suitable as process controls for RNA extraction from various sample matrices. These specially-engineered, non-infectious, MS2 phage-like particles protect their contents from degradation by nucleases and can package sequences of up to 1.5 kb from viruses such as SARS-CoV-2, foot-and-mouth disease virus, and human immunodeficiency virus. We also offer made-to-order VariSafe RNAs (contact for details).

### Application Notes:

For use as a process control in standard RNA extraction and detection protocols such as viral RNA extraction and purification followed by detection by LAMP or RT-PCR. For heat lysis, we recommend 65 °C for 5 minutes during the detection method, if possible, though a range of temperatures from at least 50 °C can be used.

*\*These products are intended for research use only, not for diagnostic use. The safety and efficacy of these products in diagnostic or other clinical uses has not been established.*

### Shipping and Storage:

VariSafe RNA is stored at 4 °C in 10 mM Tris-HCl, 0.1 mM EDTA, pH 8.0.

VariSafe RNA is shipped on dry or blue ice. On arrival store at 4 °C for optimum stability.

Repeated freeze/thaw cycles should be avoided.

### Quality Control:

- VariSafe RNA concentrations: A known polymerase is used to create a standard curve with a real-time qRT-PCR assay against which the activity of this enzyme is measured.
- VariSafe RNA is free of detectable RNase and DNase (exo- and endonuclease).