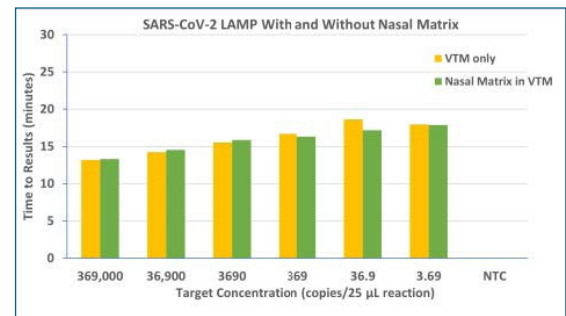
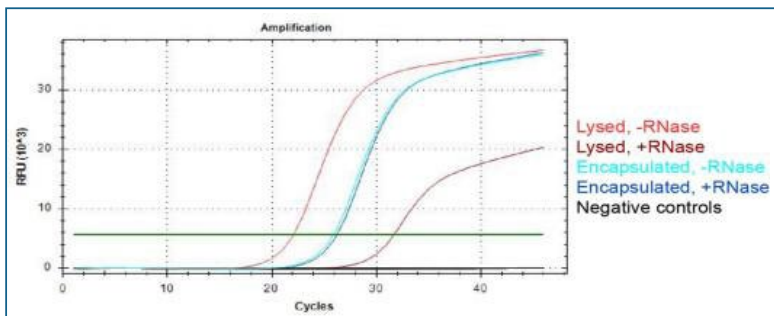


## PR1MA™ RNA Controls

### Nuclease-resistant RNA controls

Working with infectious viruses and foreign animal disease agents can be challenging and hazardous. PR1MA™ RNA products offer a safe and stable option when native RNA samples originate from biohazardous sources, are unstable, or are otherwise hard to obtain. PR1MA™ RNAs are ideal internal or process controls for the development and optimization of diagnostic assays:



### Nuclease Resistant

Protection of PR1MA™ RNA from nuclease degradation in a real-time Taq RT-PCR assay.

- 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

### Matrix Resistant

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

MIDSCI 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, email us at [tech@midsci.com](mailto:tech@midsci.com).

## PR1MA™ RNA Controls Expressed in: E. coli

Contents: RNAs are provided at a concentration of either 1E4 (PR-VSC-SM-) or 1E7 copies/ uL (PR-VSC-LG-).

See below for information about the sequences in each PR1MA™ RNA.

Item #	Description	Copies of Target Sequence
PR-VSC-SM-COV100	SARS-CoV-2 (Wuhan-Hu-1) N gene	1E6
PR-VSC-LG-COVN1ML	SARS-CoV-2 (Wuhan-Hu-1) N gene	1E10
PR-VSC-SM-COVP100	SARS-CoV-2 (Wuhan-Hu-1) N gene w/ RPP30	1E6
PR-VSC-LG-COVP1ML	SARS-CoV-2 (Wuhan-Hu-1) N gene w/ RPP30	1E10
PR-VSC-SM-FMDBOS	FMDV polyprotein w/ Bos taurus 18S rDNA	1E6
PR-VSC-LG-FMDBOS	FMDV polyprotein w/ Bos taurus 18S rDNA	1E10
PR-VSC-SM-FMDV100	FMDV polyprotein	1E6
PR-VSC-LG-FMDV1ML	FMDV polyprotein	1E10
PR-VSC-SM-HIV1GAG	HIV-1 gag gene	1E6
PR-VSC-LG-HIV1GAG	HIV-1 gag gene	1E10

## Background

PR1MA™ 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 PR1MA™ RNAs (contact us at [tech@midsci.com](mailto:tech@midsci.com) 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 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 & Storage

- PR1MA™ RNA is stored at 4°C in 10 mM Tris-HCl, 0.1 mM EDTA, pH 8.0.
- 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

- 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.
- RNA is free of detectable RNase and DNase (exo- and endonuclease).