

Certificate of Analysis

VariSafe™ RNA SARS-CoV-2 N gene and human RPP30

Product Number: 1002
Lot Number: 220303PB
Assay Date: 01/23
Expiration Date: 01/25
Storage Temperature: 4 °C
Storage Buffer: 10 mM Tris-HCl, 100 mM NaCl, 1 mM MgCl₂, 0.1% gelatin, pH 7.0
Specification Version: DM-VSRNA-v1.0

Warning: This product is distributed for laboratory research use only. **Caution: Not for diagnostic use.** The safety and efficacy of this product in diagnostic or other clinical uses has not been established.

Description: This product consists of purified, engineered MS2 phage-like particles (PLPs) containing an mRNA transcript corresponding to a portion of the SARS-CoV-2 (Wuhan-Hu-1) nucleocapsid gene and the human RNase P gene *RPP30*. These PLPs can be used as nuclease-resistant process controls or standards. RNA can be released from these PLPs using traditional extraction methods or heat lysis. 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.

Target sequence:

```
GAGCTCGAACAACTAAAATGTCTGATAATGGACCCCAAAATCAGCGAAATGCACCCCGCATTACGTTTGGTGGACCCTCAGATTCA
ACTGGCAGTAACCAGAATGGAGAACGCAGTGGGGCGCGATCAAACAACGTCGGCCCCAAGGTTTACCCAATAATACTGCGTCTTG
GTTACCCGCTCTCACTCAACATGGCAAGGAAGACCTTAAATCCCTCGAGGACAAGGCGTTCCAATTAACACCAATAGCAGTCCAGAT
GACCAAATTGGCTACTACCGAAGAGCTACCAGACGAATTCGTGGTGGTGACGGTAAAATGAAAGATCTCAGTCCAAGATGGTATTTCT
TACTACCTAGGAAGTGGCCAGAAGCTGGACTTCCCTATGGTGCTAACAAAGACGGCATCATATGGGTTGCAACTGAGGGAGCCTTG
AATACACCAAAAAGATCACATTGGCACCCGCAATCCTGCTAACAATGCTGCAATCGTGCTACAACCTTCTCAAGGAACAACATTGCCAA
AAGGCTTCTACGCAGAAGGGAGCAGAGGCGGCAGTCAAGCCTTCTCGTTTCTCATCACGTAGTCGCAACAGTTCAAGAAATTCAA
CTCCAGGCAGCAGTAGGGGAACCTTCTCCTGCTAGAATGGCTGGCAATGGCGGTGATGCTGCTCTTGCTTTGCTGCTGCTTGACAGAT
TGAACCAGCTTGAGAGCAAATGTCTGGTAAAGGCCAACAAACAAGGCCAAACTGTCACTAAGAAAATCTGCTGCTGAGGCTTCTA
AGAAGCCTCGGCAAAAACGTAAGTCCACTAAAGCATACAATGTAACACAAGCTTTCGGCAGACGTGGTCCAGAACAAACCCAAGGA
AATTTTGGGGACCAGGAATAATCAGACAAGGAACTGATTACAAACATTGGCCGCAATTGCACAATTTGCCCCAGCGCTTCAGCG
TTCTTCGGAATGTGCGCATTGGCATGGAAGTCACACCTTCGGGAACGTGGAATTCGGCACGAGGTGGGACTTCAGCATGGCGGTG
TTTCAGATTTGGACCTGCGAGCGGGTTCTGACCTGAAGGCTCTGCGCGACTTGTGGAGACAGCCGCTCACCTGGCTATTCAGTTGTT
GCTATCAATCATATCGTT
```

Concentration: Samples are quantified using a TaqMan real-time qRT-PCR assay against a known standard before and after adjustment to the final concentration. Samples and standards have replicate variability <20%.

DNase contamination: A fluorescent probe-based detection kit is used to test for DNase contamination.
Specification: Below the lower limit of detection (1x10⁻⁴ U DNase I activity) in 1E8 copies in 25 minutes at 37 °C.

RNase contamination: A fluorescent probe-based detection kit is used to test for RNase contamination.
Specification: Below the lower limit of detection (2 pg RNase A activity) in 1E8 copies in 25 minutes at 37 °C.

Product meets all specifications.

SIGNATURE: *D Mead*

Date: Jan 18, 2023