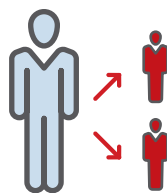


# What Do You Know About the COVID-19 Variants?

*SARS-CoV-2 and its variants, if it doesn't end, we must know what we are defeating*

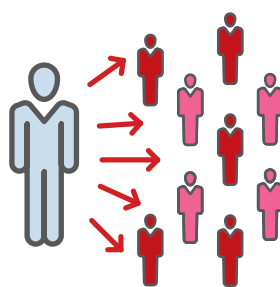
## Threat of SARS-CoV-2 Variant

### To Our Society



Wild-type

VS



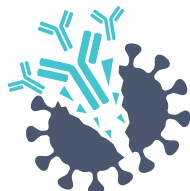
SARS-CoV-2 Variants

### **Increases Transmissibility<sup>1)</sup>**

Most of the SARS-CoV-2 variants are more contagious than the wild-type. Delta variant, in particular, is even more transmissible than the other variants.

WHO Label	Reproduction no. relative to wild-type
Alpha	29% ↑
Beta	25% ↑
Gamma	38% ↑
Delta	97% ↑ ↑

### To Our Immune System



Wild-type

VS



SARS-CoV-2 Variants

### **Reduces Neutralization<sup>2-6)</sup>**

Many cases were reported that SARS-CoV-2 variants can inhibit antibody neutralization, which may reduce vaccine efficacy/effectiveness.

### To Our Health



Wild-type

VS



SARS-CoV-2 Variants

### **Increases Severity/Hospitalization<sup>7,8)</sup>**

Patients infected SARS-CoV-2 variants showed more severe illness and are more likely to be hospitalized than patients infected with wild-type.

Therefore,

**“ Differentiation of the wild-type from variants is essential for precise diagnosis and variants surveillance ”**

Why Seegene?

Seegene's Complete Solution for SARS-CoV-2 Variants



## Seegene's Portfolio for SARS-CoV-2 Variants

	Allplex™ SARS-CoV-2 Variants I Assay*	Allplex™ SARS-CoV-2 Variants II Assay**	Novaplex™ SARS-CoV-2 Variants IV Assay	Novaplex™ SARS-CoV-2 Variants V Assay
Products	<p>CE-IVD Marked</p>	<p>CE-IVD Marked</p>	<p>RUO</p>	<p>RUO</p>
Alpha (B.1.1.7)	✓	•	•	•
Beta (B.1.351)	✓	✓	✓	•
Gamma (P.1)	✓	✓	•	•
Delta (B.1.617.2)	•	✓	✓	✓
Eta (B.1.525)	✓	•	•	•
Iota (B.1.526)	✓	•	•	•
Kappa (B.1.617.1)	•	✓	✓	✓
Lambda (C.37)	•	•	•	✓

\* Available in the U.S. as Novaplex™ Variants I Assay (Research Use Only)

\*\* Available in the U.S. as Novaplex™ Variants II Assay (Research Use Only)

### Specimens/Samples

- Nasopharyngeal swab
- Bronchoalveolar lavage (BAL)

- Nasopharyngeal aspirate
- Sputum

- Oropharyngeal swab
- Saliva

**Seegene's complete solution for SARS-CoV-2 variants provides insight for proactive response against rapidly emerging variants**

### Seegene's Assays Provide Superior Values

#### 1 Tube Solution for SARS-CoV-2 Variants



- Accurately detects SARS-CoV-2 variants with 1 tube assay
- Seegene's variants assays allow detection of the most widespread variants

#### Multiplex Real-time PCR



- Simultaneous detection and identification using real-time PCR
- Provides individual Ct value of multiple targets

#### Flexible Application



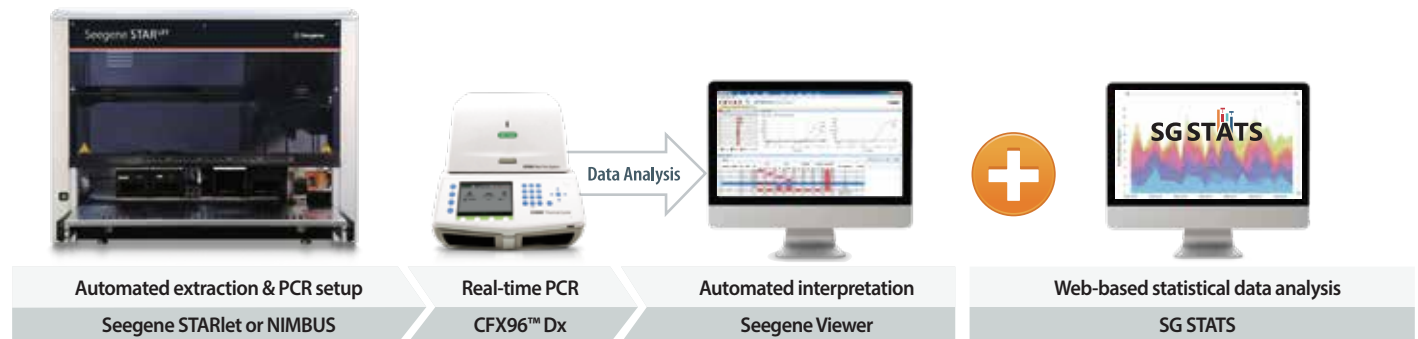
- Compatible with various sample types such as nasopharyngeal swab/aspirate, saliva and sputum
- Extraction-free for swab and saliva

#### Reliable Test Result



- High sensitivity; 50 RNA copies/rxn
- Provides reliable results by whole process verification

### Streamlined Automated System

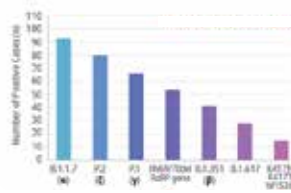


### Premium Solution for SARS-CoV-2 and Variants Analysis SG STATS



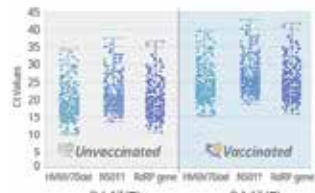
Variant trend monitoring

Real-time variant trend monitoring for targeted patient group by geography, age, etc.



Visual analytics of associated variants

Data visualization by combination of mutations



In-depth variant analysis

Ct-value available by vaccination, symptom and other researcher's preference

# Kick your Real-time PCR up a notch!

With Seegene's core proprietary technology and expertise, enhance your MDx products with incomparable performance and usability.



## Oligo Design

Oligo design technology for high multiplex PCR: **SG-Insilico™**

Enables rapid designing of high multiplex oligos using Seegene-developed algorithms and confidential variables



## Amplification

Highly specific amplification technology for high multiplex PCR: **DPO™**

Allows the implementation of high multiplex diagnostics with unparalleled specificity using Seegene's unique primer structure



## Target Detection

High multiplex target detection technology: **TOCE™**

Achieves accurate target signals by independently controlling multiple target signals for primer and probe annealing temperatures



## Quantitative Detection

High multiplex target detection & quantification technology: **MuDT™**

Broadens capacity for high multiplex target detection & quantification by enabling analysis of multiple Ct values in a single detection channel



## Interpretation

High multiplex signal processing technology: **DSP™**

Enables accurate reporting of target's positive or negative results through Seegene's proprietary signal processing algorithms

## Ordering Information

Product	Volume	Cat. No.
Allplex™ SARS-CoV-2 Variants I Assay	100 rxns*	RV10286X
	50 rxns	RV10287Y
Novaplex™ SARS-CoV-2 Variants I Assay	124 rxns	R-RV10286W
	50 rxns	R-RV10287Y
Allplex™ SARS-CoV-2 Variants II Assay	100 rxns*	RV10305X
	50 rxns	RV10306Y
Novaplex™ SARS-CoV-2 Variants II Assay	124 rxns	R-RV10305W
	50 rxns	R-RV10306Y
Novaplex™ SARS-CoV-2 Variants IV Assay	124 rxns	R-RV10315W
	50 rxns	R-RV10316Y
Novaplex™ SARS-CoV-2 Variants V Assay	124 rxns	R-RV10341W
	50 rxns	R-RV10342Y

Instrument	Cat. No.
CFX96™ Dx (2 modules)	1845097-IVD & 1841000-IVD
Seegene NIMBUS	65415-03
Seegene STARlet	67930-03
SEEPREP32™	SG71100
Maelstrom™ 9600	M9600
STARMag 96 X 4 Universal Cartridge Kit*	744300.4UC384
STARMag 96 X 4 Viral DNA/RNA 200 Ct Kit*	EX00013C
STARMag 96 ProPrep**	EX00009P EX00009T
STARMag 96 ProPrep C**	EX00017P EX00017T
TANBEAD® Nucleic Acid Extraction Kit***	
OptiPure Viral Auto Tube	W665566
OptiPure Viral Bulk Plate	W665A10
	EX00023P
SGRespi™ Pure ***	EX00024P EX00025T

\* For use with Seegene NIMBUS and Seegene STARlet only,

\*\* For use with SEEPREP32™, \*\*\* For use with Maelstrom™ 9600

Not Available for Sale in the United States

## References

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- 8) Public Health England. SARS-CoV-2 variants of concern and variants under investigation in England Technical briefing 16 2021 [Available from: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/997414/Variants\\_of\\_Concern\\_VOC\\_Technical\\_Briefing\\_16.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/997414/Variants_of_Concern_VOC_Technical_Briefing_16.pdf)]



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