

SARS-CoV-2 & UK Variant

(S UK, S and N genes)

- ▶▶ The appearance of mutations is a natural and expected phenomenon within the evolution process of the virus. In fact, some specific mutations define the viral genetic groups that are currently circulating globally.

Thanks to the genetic sequencing of the pathogen worldwide, it has been possible to establish patterns of dispersal and evolution of the virus.

- ▶▶ On December 14, 2020, the United Kingdom declared an increase in the incidence of SARS-CoV-2 in some regions associated with a new variant of the virus with a supposed greater transmission capacity. This variant, called VOC202012/01 (B.1.1.7) presented 23 different mutations: 13 non-synonymous, including a series of mutations in the spike protein (S), 4 deletions and 6 synonymous. By the end of December, this variant had been detected in 31 countries and territories in 5 of the 6 WHO regions. One of the mutations is the deletion at positions 69-70 in the spike protein. Detection of the HV 69/70 deletion is of great importance since it has been related to immune leakage in immunosuppressed patients and to increased viral infectivity. Another cause for concern in relation to the HV 69/70 deletion is that it affects the sensitivity of virus detection using molecular techniques (RT-PCR) that detects the S gene.

The presence of the HV 69/70 deletion is associated with the UK variant, lineage B.1.1.7, however, other variants such as B.1.1.298 (Danish lineage) or B.1.258 also have this deletion.

- ▶▶ The appearance of variants that increase the transmissibility of the virus, its virulence or that escape the action of the neutralizing antibodies generated after natural infection or the vaccine, constitute a first-order public health problem that can have an important impact on control of the pandemic.



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Lyophilised product



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SARS-CoV-2 & UK Variant (S UK, S and N genes)

VIASURE SARS-CoV-2 & UK Variant (S UK, S and N genes) Real Time PCR Detection Kit is a real-time RT-PCR test designed for the qualitative detection of RNA from the SARS-CoV-2 and the HV 69/70 deletion of the S gene for SARS-CoV-2 associated to the SARS-CoV-2 VOC202012/01 (lineage B.1.1.7) variant and other variants in nasopharyngeal swabs from individuals suspected of SARS-CoV-2 infection disease (COVID-19) by their healthcare professional (HCP).

RNA is extracted from respiratory specimens. Complementary DNA (cDNA) is synthesised and amplified using RT-PCR and detected using fluorescent reporter dye probes specific for SARS-CoV-2 and HV 69/70 deletion.

Analytical sensitivity

- ▶ For SARS-CoV-2, **VIASURE SARS-CoV-2 & UK Variant (S UK, S and N genes) Real Time PCR Detection Kit** has a detection limit (LoD) of 40 genome copies/rxn for S gene and 160 genome copies/rxn for N gene.
- ▶ For SARS-CoV-2 (HV 69/70 deletion), **VIASURE SARS-CoV-2 & UK Variant (S UK, S and N genes) Real Time PCR Detection Kit** has a detection limit (LoD) of 40 genome copies/rxn for S gene (HV 69/70 deletion), and 20 genome copies/rxn for N gene.

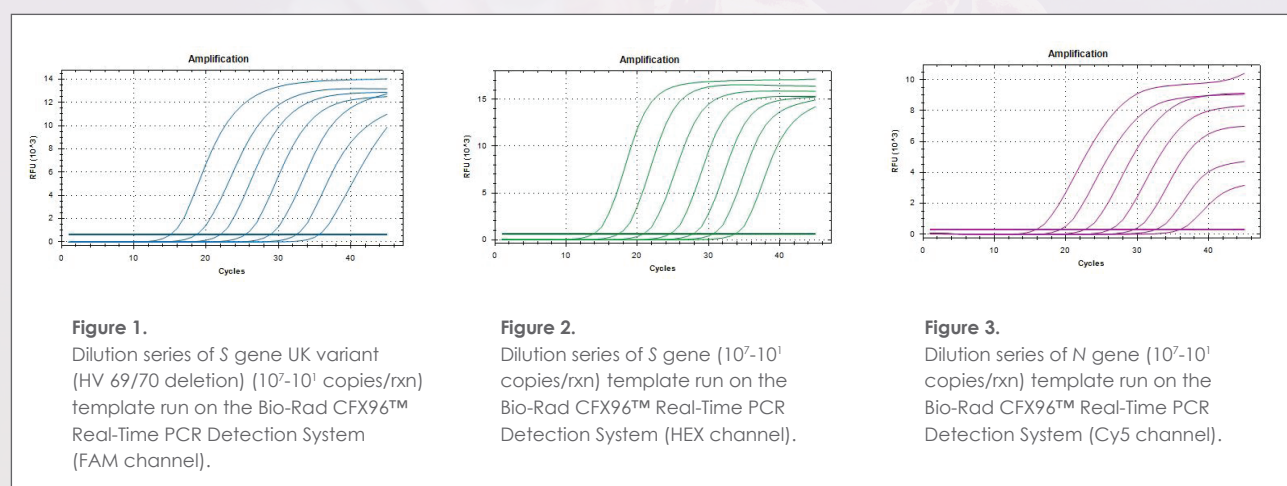


Figure 1.
Dilution series of S gene UK variant (HV 69/70 deletion) (10⁷-10¹ copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (FAM channel).

Figure 2.
Dilution series of S gene (10⁷-10¹ copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (HEX channel).

Figure 3.
Dilution series of N gene (10⁷-10¹ copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (Cy5 channel).

References - VIASURE SARS-CoV-2 & UK Variant (S UK, S and N genes) Real Time PCR Detection Kit -

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|--|---|
| 6 x 8-well strips, low profile _____ VS-SUK106L | 6 x 8-well strips, high profile _____ VS-SUK106H |
| 12 x 8-well strips, low profile _____ VS-SUK112L | 12 x 8-well strips, high profile _____ VS-SUK112H |
| 96-well plate, low profile _____ VS-SUK113L | 96-well plate, high profile _____ VS-SUK113H |
| 1 x 8-well strips, low profile _____ VS-SUK101L | 1 x 8-well strips, high profile _____ VS-SUK101H |
| TUBE FORMAT WITH INTERNAL CONTROL: 4 tubes x 24 reactions _____ VS-SUK196T | |



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For more information and use procedure, read the instructions for use included in this product.



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