

SARS-CoV-2 & UK Variant

(S UK, ORF1ab 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 worldwide.

Since the initial genomic characterization of SARS-CoV-2, the virus has divided into different groupings. Thanks to the genetic sequencing of the pathogen, it has been possible to establish patterns of dispersal and evolution of the virus.

- ▶▶ On December 14th, 2020, the United Kingdom declared an increase in the incidence of SARS-CoV-2 in some regions associated with a new virus variant 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 (S) protein, 4 deletions, and 6 silent or synonymous mutations. By the end of December, this variant had been detected in 31 countries and in five of the six World Health Organization regions.

One of these mutations is the deletion of nucleotides at positions 69-70 of protein S. Detection of the HV 69/70 deletion is of vital importance since it has been associated with the loss of immunity in immunosuppressed patients and with increased viral infectivity. Another concern related to the HV 69/70 deletion is that it affects the sensitivity of virus detection using molecular techniques (RT-PCR) that detect the S gene.

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



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VIASURE SARS-CoV-2 & UK Variant (S UK, ORF1ab and N genes) Real Time PCR Detection Kit is designed for the qualitative detection of SARS-CoV-2 RNA and the HV 69/70 deletion of the S gene for the SARS-CoV-2 associated with variant SARS-CoV-2 VOC-202012/01 (lineage B.1.1.7) and other variants, from nasopharyngeal swabs from individuals suspected of COVID-19 infection.

The intended use of the kit is, always in combination with clinical and epidemiological risk factors, to facilitate the diagnosis of infections caused by variants that carry the HV 69/70 deletion of SARS-CoV-2.

The RNA is extracted from respiratory specimens, later the complementary DNA synthesized in a single step is amplified by means of real-time PCR. Detection is carried out using specific oligonucleotides and a probe labeled with a fluorescent molecule and another quencher to detect SARS-CoV-2 and HV 69/70 deletion.

Analytical sensitivity

VIASURE SARS-CoV-2 & UK Variant (S UK, ORF1ab 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), 40 genome copies/rxn for ORF1ab gene and 80 genome copies/rxn for N gene. (Figures 1, 2 and 3).

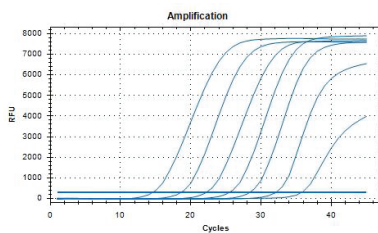


Figure 1.

Dilution series of S gene (HV 69/70 deletion) (10^7 - 10^1 copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (FAM channel).

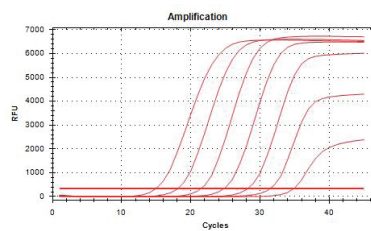


Figure 2.

Dilution series of ORF1ab gene (10^7 - 10^1 copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (ROX channel).

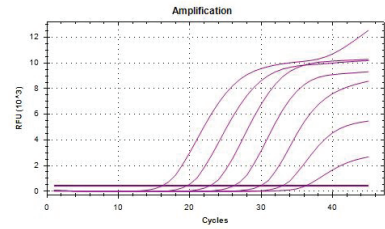


Figure 3.

Dilution series of N gene (10^7 - 10^1 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, ORF1ab and N genes) Real Time PCR Detection Kit -

6 x 8-well strips, low profile _____ VS-SUK206L
12 x 8-well strips, low profile _____ VS-SUK212L
96-well plate, low profile _____ VS-SUK213L
1 x 8-well strips, low profile _____ VS-SUK201L

6 x 8-well strips, high profile _____ VS-SUK206L
12 x 8-well strips, high profile _____ VS-SUK212H
96-well plate, high profile _____ VS-SUK213L
1 x 8-well strips, high profile _____ VS-SUK201H

TUBE FORMAT WITH INTERNAL CONTROL: 4 tubes x 24 reactions _____ VS-SUK296T

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



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