

Information on mutations of the spike protein of SARS-CoV-2

The lineage defining mutations of the spike protein of SARS-CoV-2 are presented in the table below. The different mutations can be detected with the use of gerbion® real time RT-PCR kits:

virellaSARS-CoV-2 mutant 2 (gerbion cat. No. G01136): +
E484K, N501Y

virellaSARS-CoV-2 mutant 3 (gerbion cat. No. G01138): +
L452R, P681R

virellaSARS-CoV-2 mutant 4 (gerbion cat. No. G01141): +
G142D, Y145H, A222V

Lineage		WHO label	G142D	Y145H	A222V	L452R	E484K	N501Y	P681R
<u>B.1.1.7</u>	*	Alpha	-	-	-	-	-	+	P681H
<u>B.1.351</u>		Beta	-	-	-	-	+	+	-
<u>P.1</u>		Gamma	-	-	-	-	+	+	-
<u>B.1.617.2</u>		Delta	+	-	+ / -	+	-	-	+
<u>B.1.1.529</u>		Omicron	-	-	-	(1)	-	-	(2)
C.37		Lambda	-	-	-	L452Q	-	-	-
B.1.621		Mu	-	Y145N	-	-	+	+	P681H
AY.4.2			+	+	+	+	-	-	+
B.1.640.2			-	-	-	(3)	+	+	P681H

Underlined lineages are listed as Variants of Concern (VoC). The other lineages are listed as Variants of Interest (VoI).

Colour Code: blue (G01136), green (G01138), orange (G01141)

* De-escalated variants (ecdc.europa.eu/en/covid-19/variants-concern)

- (1) The mutations N440K, G446S, S477N and T478K lead to a strong delay / inhibition of the amplification curve for the Omicron variant (BA.1, BA.3). Subvariant BA.2 does not contain the mutation G446S, therefore an amplification curve is less affected.
- (2) The mutations N679K and P681H in combination show a specific shift for the melting curve, with lower T_m than the Control MUT.
- (3) The mutation Y449N will show a specific shift in the melting curve with a T_m between Control MUT and Control WT.