

The full list of variants and predicted effects

	Alpha (B.1.1.7)	Beta (B.1.351)	Gamma (P.1)	Delta (B.1.617.2)	Omicron (B.1.1.529)	Lambda (C.37)	Mu (B.1.621)
First detected	September 2020	May 2020	November 2020	October 2020	November 2021	Dec-2020	January 2021
Place of detection	England	South Africa	Brazil	India	South Africa/Netherlands	Peru	Colombia
Number of Mutations	23 (17 of which change amino acids)	21 (8 of which change amino acids)	17 (11 of which change amino acids)	12 mutations	~50 mutations	~21 mutations including 6 amino acids deletion in the Spike protein	~21 mutations
Transmissibility	increased in 29% (95% CI: 24–33) [1] (relative to previously circulating variants at the time and place of emergence)	increased in 25% (95% CI: 20–30) [1] (relative to previously circulating variants at the time and place of emergence)	increased in 38% (95% CI: 29–48) [1] (relative to previously circulating variants at the time and place of emergence)	increased in 97% (95% CI: 76–117) [1] (relative to previously circulating variants at the time and place of emergence)	increased in 105% (95% CI: 96–114) compared with Delta variant [3]	increased compared with the original Wuhan isolate [4]	could have increased transmissibility [5]

References:

- 1- Campbell, F., Archer, B., Laurenson-Schafer, H., Jinnai, Y., Konings, F., Batra, N., Pavlin, B., Vandemaele, K., Van Kerkhove, M.D., Jombart, T., Morgan, O., Le Polain De Waroux, O., 2021. Increased transmissibility and global spread of SARS-CoV-2 variants of concern as at June 2021. *Eurosurveillance* 26. doi:10.2807/1560-7917.es.2021.26.24.2100509
- 2- <https://outbreak.info/situation-reports>
- 3- Sofonea, M.T., Roquebert, B., Foulongne, V., Verdume, L., Trombert-Paolantoni, S., Roussel, M., Haim-Boukobza, S., Alizon, S., 2022. From Delta to Omicron: analysing the SARS-CoV-2 epidemic in France using variant-specific screening tests (September 1 to December 18, 2021). doi:10.1101/2021.12.31.21268583
- 4- Moghaddar, M., Radman, R., Macreadie, I., 2021. Severity, Pathogenicity and Transmissibility of Delta and Lambda Variants of SARS-CoV-2, Toxicity of Spike Protein and Possibilities for Future Prevention of COVID-19. *Microorganisms* 9, 2167. doi:10.3390/microorganisms9102167
- 5- Tada, T., Zhou, H., Dcosta, B.M., Samanovic, M.I., Cornelius, A., Herati, R.S., Mulligan, M.J., Landau, N.R., 2021. Neutralization of Mu and C.1.2 SARS-CoV-2 Variants by Vaccine-elicited Antibodies in Individuals With and Without Previous History of Infection. doi:10.1101/2021.10.19.463727