

Last horizon scan	Signals currently under monitoring and investigation	Variants under investigation	Variants of concern
Cluster detection 19-04-2021	B.1.429 (California)	VUI-21JAN-01 P.2 (Brazil)	VOC-20DEC-01 B.1.1.7 (UK)
Mutation Scan 20-04-2021	B.1.526 (New York)	VUI-21FEB-01 A.23.1 with E484K (UK) focus Liverpool	VOC-20DEC-02 B.1.351 (South Africa)
International Scan 21-04-2021	B.1.1.7 with S494P (UK)	VUI-21FEB-03 B.1.525	VOC-21JAN-02 P.1 (Japan ex Brazil)
Signals investigated at last scan: 1	A.27 (France)	VUI-21FEB-04 B.1.1.318 (England)	VOC-21FEB-02 B.1.1.7 with E484K (UK) focus Bristol/SW.
New genomes in last 24 hr period: 1482	B.1.1.7 with Q677H (UK)	VUI-21MAR-01 B.1.324.1 with E484K (UK)	
Note: Signals of individual mutations and new clusters excluded until defined variant identified	B.1 with profile: P26S, V126A, S477N, E484K, P681H, T1027I, D1118H, nsp6d, Sd68, Sd143 (seen in imported UK cases)	VUI-21MAR-02 P.3 (Philippines)	
	B1.214.2 (Belgium)	VUI-21APR-01 B.1.617.1 (India)	
	B.1.1.1 with L452Q and F490S (seen in imported UK cases)		
	R1 Associated with multiple locations		
	B.1.617.2 (India)		
	B.1.617.3 (India)		

Variants provisionally extinct (not detected for 12 weeks in the UK)	International signals under monitoring	International variants under investigation	International variants of concern
	Brazil Lineage B.1.1.28 with N501T and E484Q from Belo Horizonte		
	Variant Associated with Tanzania Travellers; R346K, T478R and E484K		

MUTATION PROFILES: VARIANTS OF CONCERN AND VARIANTS UNDER INVESTIGATION

VARIANT	MUTATION PROFILE (SUBSTITUTIONS AND INSERTION/DELETIONS)
VOC-20DEC-01	S: del69-70 del143-144 N501Y A570D P681H T716I S982A D1118H; ORF1ab: T1001I A1708D I2230T del3675-3677; ORF8: Q27* R52I Y73C; N: D3L
VOC-20DEC-02	S: L18F D80A D215G del242-244 R246I K417N E484K N501Y A701V; ORF1ab: T265I K1655N K3353R del3675-3677; ORF3a: Q57H S171L; E: P71L T205I
VOC-21FEB-02	S: E484K; N: A173V A398T
VOC-21JAN-02	S: T20N P26S K417T E484K N501Y T1027I; ORF1ab: S1188L K1795Q del3675-3677; ORF8: E92K; N: P80R
VUI-21FEB-01	S: R102I F157L V367F E484K Q613H P681R; ORF1ab: L1559F M3655I L3667F M3752I; ORF8: L84S E92K; N: S202N
VUI-21FEB-03	S: Q52R del69-70 del144 E484K Q677H F888L; ORF1ab: del3675-3677 P4715F; E: L21F; M: I82T; ORF6: del2; N: del2-3
VUI-21FEB-04	S: T95I del144 E484K P681H D796H; ORF1ab: E1196V K2511N T2936I A3209V T3284I del3675-3677 V6672M; M: I82T; ORF8: del1-3 E106*; N: del208-209
VUI-21JAN-01	S: E484K; ORF1ab: L3468V; N: A119S M234I
VUI-21MAR-01	S: E484K; ORF1ab: G894S G5530C; ORF8: del27922nt-27956nt
VUI-21MAR-02	S: del141-143 E484K N501Y P681H E1092K H1101Y V1176F; ORF1ab: D736G L438P D112E L71F A368V; ORF8: K2Q
VUI-21APR-01	S: E154K L452R E484Q P681R; ORF1ab: T1567I T3646A M5753I K6711R; ORF7a: V82A; N: R203M

Where INDEL are defined in 'nt' the INDEL is non-codon aligned.

MUTATION PROFILES: SIGNALS IN MONITORING

VARIANT	MUTATION PROFILE (SUBSTITUTIONS AND INSERTION/DELETIONS)
B.1.429 (California)	S: S13I W152C L452R; N: T205I
B.1.526 (New York)	S: L5F T95I D253G S477N/E484K A701V
B.1.1.7 with S494P (UK)	S: S494P
A.27 (France)	S: L18F L452R N501Y A653V H655Y D796Y G1219V
B.1.1.7 with Q677H (UK)	S: Q677H
High scoring variant in imported UK cases.	S: P26S V126A S477N E484K P681HT1027I D1118H
R1 (Multiple Locations)	S: W152L E484K D614G G769V
B.1.1.1 with L452Q and F490S (seen in imported UK cases)	S: G75V T76I L452Q F490S D614G T859N
B1.214.2 (Belgium)	S: Q414K N450K D614G T716I Ins: 22204 - ACAGATCGA
B.1.617.2 (India)	S: T19R, G142D, L452R, T478K, D614G, D950N, P681R
B.1.617.3 (India)	S: T19R, L452R, E484Q, D614G, P681R, D950N, E1072K