

Table S1. Information on the SARS-CoV-2 specimens used in this study and sequencing statistics

| Sample name | Sampling date | Mean read quality | No. of reads | Total bases (bp) | Pango lineage | Nextclade | Variant of concern | % n |
|-------------|--------------------|-------------------|--------------|------------------|---------------|-----------|--------------------|-------------|
| KD-Cov-N1 | June 1, 2020 | 13.7 | 97727 | 49062840 | B.1.497 | 20C | NA | 0.618667023 |
| KD-Cov-N2 | July 16, 2020 | 13.7 | 90046 | 45850072 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N3 | August 5, 2020 | 13.8 | 84198 | 42075872 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N4 | August 8, 2020 | 13.7 | 93609 | 47230519 | B.1.497 | 20C | NA | 0.407985821 |
| KD-Cov-N5 | August 14, 2020 | 13.7 | 71420 | 36459834 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N6 | August 16, 2020 | 13.8 | 106902 | 54255359 | B.1.497 | 20C | NA | 1.488145002 |
| KD-Cov-N7 | August 18, 2020 | 13.9 | 90598 | 45577960 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N8 | August 20, 2020 | 13.7 | 65468 | 35064019 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N9 | August 24, 2020 | 13.7 | 249545 | 125211671 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N10 | August 25, 2020 | 13.8 | 329859 | 164420789 | B.1.497 | 20C | NA | 0.407985821 |
| KD-Cov-N11 | August 26, 2020 | 13.8 | 246333 | 121692835 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N12 | August 27, 2020 | 13.8 | 205273 | 101883154 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-N13 | September 16, 2020 | 13.6 | 195913 | 88596784 | B.1.497 | 20C | NA | 5.735210514 |
| KD-Cov-N15 | September 24, 2020 | 13.5 | 355753 | 158720533 | B.1.497 | 20C | NA | 4.193559175 |
| KD-Cov-N16 | September 27, 2020 | 13.3 | 257381 | 136275951 | B.1.497 | 20C | NA | 0.404641675 |
| KD-Cov-D1 | November 24, 2021 | 12.2 | 213172 | 109214370 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D2 | November 28, 2021 | 12.2 | 254839 | 127563457 | AY.122.5 | 21J | Delta | 0.408163265 |
| KD-Cov-D3 | November 30, 2021 | 12.3 | 200278 | 101147013 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D4 | November 30, 2021 | 12.2 | 216656 | 112761959 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D5 | December 1, 2021 | 12.2 | 154717 | 79754032 | AY.122.5 | 21J | Delta | 0.408163265 |
| KD-Cov-D6 | December 2, 2021 | 12.2 | 148925 | 76970325 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D7 | December 3, 2021 | 12.3 | 147915 | 76862078 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D8 | December 3, 2021 | 12.2 | 191522 | 98908230 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D9 | December 4, 2021 | 12.6 | 138636 | 72524485 | AY.122.5 | 21J | Delta | 0.408163265 |
| KD-Cov-D10 | December 4, 2021 | 12.7 | 143932 | 75616497 | AY.122.5 | 21J | Delta | 0.404817665 |
| KD-Cov-D11 | December 4, 2021 | 12.7 | 135306 | 67475945 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D12 | December 6, 2021 | 12.6 | 125037 | 65153681 | AY.69 | 21I | Delta | 0.408163265 |
| KD-Cov-D13 | December 7, 2021 | 12.6 | 156115 | 82069259 | AY.122.5 | 21J | Delta | 0.411508866 |
| KD-Cov-D14 | December 7, 2021 | 12.6 | 105002 | 55026089 | AY.69 | 21I | Delta | 0.411508866 |
| KD-Cov-D15 | December 7, 2021 | 12.6 | 125775 | 66358774 | AY.69 | 21I | Delta | 0.404817665 |
| KD-Cov-O1 | March 10, 2022 | 12.0 | 157129 | 83751586 | BA.2.3 | 21L | Omicron | 0.405360134 |
| KD-Cov-O2 | March 12, 2022 | 12.1 | 135009 | 71114302 | BA.2 | 21L | Omicron | 0.408710218 |
| KD-Cov-O3 | March 12, 2022 | 12.1 | 119159 | 65787777 | BA.1.1 | 21K | Omicron | 0.405170104 |
| KD-Cov-O4 | March 13, 2022 | 12.0 | 155887 | 81419232 | BA.2 | 21L | Omicron | 0.405360134 |
| KD-Cov-O6 | March 15, 2022 | 12.0 | 171693 | 84726039 | BA.1.1 | 21K | Omicron | 0.408518618 |
| KD-Cov-O7 | March 15, 2022 | 11.9 | 204088 | 104862573 | BA.1.1 | 21K | Omicron | 0.411867131 |
| KD-Cov-O8 | March 16, 2022 | 12.0 | 1565095 | 80521388 | BA.1.1 | 21K | Omicron | 0.408518618 |
| KD-Cov-O9 | March 22, 2022 | 12.0 | 116172 | 58824089 | BA.2.3 | 21L | Omicron | 0.408710218 |
| KD-Cov-O10 | March 26, 2022 | 12.1 | 115335 | 58648091 | BA.1.1 | 21K | Omicron | 0.415215644 |
| KD-Cov-O11 | March 10, 2022 | 12.8 | 64442 | 34454765 | BA.2.3 | 21L | Omicron | 0.405360134 |
| KD-Cov-O12 | March 11, 2022 | 12.4 | 102028 | 54666886 | BA.2.3 | 21L | Omicron | 0.405360134 |
| KD-Cov-O13 | March 12, 2022 | 12.7 | 94971 | 50621699 | BA.1.1 | 21K | Omicron | 0.405170104 |
| KD-Cov-O14 | March 13, 2022 | 12.1 | 65493 | 32985498 | BA.1.1 | 21K | Omicron | 0.408518618 |
| KD-Cov-O15 | March 13, 2022 | 12.7 | 64984 | 34640022 | BA.2 | 21L | Omicron | 0.405360134 |
| KD-Cov-O16 | March 14, 2022 | 12.7 | 76579 | 41320458 | BA.1.1 | 21K | Omicron | 0.405170104 |
| KD-Cov-O17 | March 14, 2022 | 12.6 | 70718 | 37463229 | BA.2.3 | 21L | Omicron | 0.405360134 |
| KD-Cov-O18 | April 20, 2022 | 11.7 | 100537 | 51061630 | BA.1.1 | 21K | Omicron | 4.00776777 |
| KD-Cov-O19 | April 20, 2022 | 11.8 | 61451 | 30893152 | BA.2 | 21L | Omicron | 6.801445977 |
| KD-Cov-O20 | April 20, 2022 | 11.8 | 75146 | 39189583 | BA.2.3 | 21L | Omicron | 4.934673367 |
| KD-Cov-O21 | April 20, 2022 | 11.7 | 69580 | 35665422 | BA.2 | 21L | Omicron | 5.783906815 |
| KD-Cov-O22 | April 20, 2022 | 11.7 | 35647 | 17861548 | BA.2 | 21L | Omicron | 9.244878833 |
| KD-Cov-O23 | April 20, 2022 | 11.8 | 36544 | 18246223 | BA.2 | 21L | Omicron | 7.688445575 |
| KD-Cov-O24 | April 20, 2022 | 11.6 | 615698 | 30753500 | BA.2 | 21L | Omicron | 7.688445575 |
| KD-Cov-O25 | February 14, 2022 | 12.3 | 1797757 | 918611851 | BA.1.1 | 21K | Omicron | 4.218320713 |
| KD-Cov-O26 | February 24, 2022 | 12.4 | 1121672 | 531331796 | BA.1 | 21K | Omicron | 15.32714664 |
| KD-Cov-O27 | April 1, 2022 | 12.4 | 551336 | 261749390 | BA.2.3 | 21L | Omicron | 7.099343955 |
| KD-Cov-O28 | April 1, 2022 | 12.3 | 845427 | 431508708 | BA.2.3 | 21L | Omicron | 9.489222118 |
| KD-Cov-O29 | April 13, 2022 | 12.4 | 952330 | 487103143 | BA.2.3 | 21L | Omicron | 7.661668229 |

NA, not available.