

# SARS-CoV-2 Sequence Analysis during COVID-19 Case Surge, Liberia, 2021

## Appendix

**Appendix Table.** Dates, collection sites, sex, age, quantitative PCR cycle threshold values, and sequence coverage for 89 samples from COVID-19 patients, Liberia, 2021

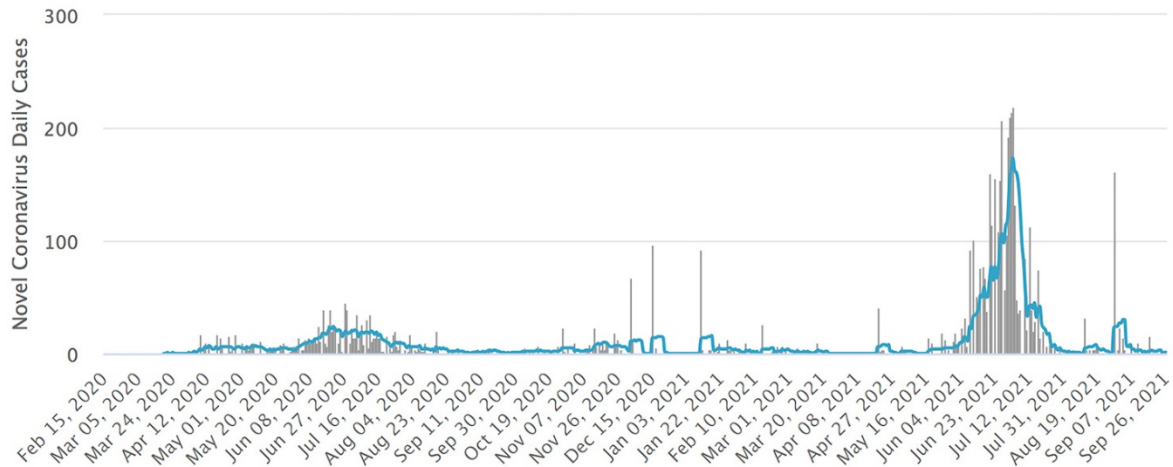
| Sample ID | Collection date | County           | Age, y/sex | C <sub>t</sub> value | % Genome recovered | Avg. depth/nucleotide | Nextclade | Variant†               | GISAID clade |
|-----------|-----------------|------------------|------------|----------------------|--------------------|-----------------------|-----------|------------------------|--------------|
| LIB-0233  | 9 Mar           | Bong             | 47/M       | 32.39                | 99.82              | 53.35                 | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0193  | 10 Mar          | Montserrado      | 30/F       | 32.70                | 99.73              | 29.48                 | 21D       | VOI Eta<br>B.1.525     | G            |
| LIB-0166  | 31 Mar          | Montserrado      | 40/F       | 26.94                | 99.94              | 1534.63               | 20H       | VOC Beta<br>B.1.351    | GH           |
| LIB-0200  | 31 Mar          | Montserrado      | 40/M       | 23.43                | 99.94              | 14633.94              | 21F       | VOI Iota<br>B.1.526    | GH           |
| LIB-0170  | 2 Apr           | Montserrado      | 58/M       | 24.77                | 99.97              | 24611.29              | 20H       | VOC Beta<br>B.1.351    | GH           |
| LIB-0171  | 4 Apr           | Montserrado      | 64/F       | 25.04                | 99.86              | 185.61                | 21D       | VOI Eta<br>B.1.525     | G            |
| LIB-0174  | 4 Apr           | Montserrado      | 35/M       | 24.63                | 99.98              | 27842.07              | 20I       | VOC Alpha<br>B.1.1.7   | GR           |
| LIB-0192  | 4 Apr           | Montserrado      | 30/M       | 22.07                | 100.00             | 69811.5               | 20H       | VOC Beta<br>B.1.351    | GH           |
| LIB-0197  | 6 Apr           | Montserrado      | 54/M       | 23.87                | 99.96              | 16087.41              | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0152  | 8 Apr           | Montserrado      | 41/M       | 24.83                | 99.91              | 681.27                | 20B       | Other                  | GR           |
| LIB-0173  | 8 Apr           | Grand Cape Mount | 41/M       | 27.23                | 99.94              | 2708                  | 20H       | VOC Beta<br>B.1.351    | GH           |
| LIB-0196  | 10 Apr          | Montserrado      | 30/M       | 19.29                | 100.00             | 93864.59              | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0198  | 10 Apr          | Montserrado      | 27/M       | 24.05                | 99.98              | 11960.47              | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0201  | 13 Apr          | Montserrado      | 46/M       | 26.42                | 99.94              | 2851.87               | 21D       | VOI Eta<br>B.1.525     | G            |
| LIB-0182  | 17 Apr          | Montserrado      | 42/M       | 23.72                | 99.99              | 22901.55              | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0204  | 3 May           | Montserrado      | 20/M       | 32.16                | 43.18              | 1.62                  | NA        | NA                     | NA           |
| LIB-0220  | 3 May           | Montserrado      | 34/M       | 29.37                | 99.92              | 215.57                | 20I       | VOC Alpha<br>B.1.1.7   | GR           |
| LIB-0248  | 4 May           | Montserrado      | 30/M       | 31.31                | 99.85              | 100.86                | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0206  | 15 May          | Montserrado      | 46/M       | 28.51                | 57.74              | 1.99                  | NA        | NA                     | NA           |
| LIB-0162  | 17 May          | Margibi          | 77/M       | 32.11                | 99.85              | 434.73                | 21D       | VOI Eta<br>B.1.525     | G            |
| LIB-0236  | 17 May          | Nimba            | 62/F       | 23.46                | 99.94              | 4894.08               | 20B       | Other                  | GR           |
| LIB-0203  | 20 May          | Nimba            | 34/M       | 32.15                | 99.71              | 39.59                 | 20B       | Other                  | GR           |
| LIB-0205  | 20 May          | Montserrado      | 64/F       | 31.14                | 99.88              | 64.74                 | 20I       | VOC Alpha<br>B.1.1.7   | GR           |
| LIB-0217  | 20 May          | Montserrado      | 37/M       | 30.01                | 99.89              | 175.39                | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0218  | 20 May          | Montserrado      | 24/F       | 32.81                | 99.81              | 18.65                 | 21A       | VOC Delta<br>B.1.617.2 | G            |
| LIB-0221  | 20 May          | Montserrado      | 10/F       | 31.91                | 99.71              | 14.87                 | 20I       | VOC Alpha<br>B.1.1.7   | GR           |
| LIB-0225  | 20 May          | Montserrado      | 68/M       | 32.97                | 85.36              | 2.78                  | NA        | NA                     | NA           |
| LIB-0226  | 20 May          | Montserrado      | 63/M       | 32.64                | 99.80              | 34.1                  | 21A       | VOC Delta<br>B.1.617.2 | G            |

| Sample ID | Collection date | County      | Age, y/sex | C <sub>t</sub> value | % Genome recovered | Avg. depth/nucleotide | Nextclade | Variant†            | GISAID clade |
|-----------|-----------------|-------------|------------|----------------------|--------------------|-----------------------|-----------|---------------------|--------------|
| LIB-0247  | 20 May          | Montserrado | 43/F       | 18.86                | 100.00             | 303638.25             | 20H       | VOC Beta B.1.351    | GH           |
| LIB-0250  | 20 May          | Montserrado | 38/F       | 22.72                | 99.98              | 14212.06              | 20B       | Other               | GR           |
| LIB-0251  | 20 May          | Montserrado | 33/F       | 26.09                | 100.00             | 7626.71               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0255  | 20 May          | Montserrado | 31/M       | 17.25                | 100.00             | 504226.47             | 20H       | VOC Beta B.1.351    | GH           |
| LIB-0253  | 27 May          | Montserrado | 27/F       | 18.58                | 100.00             | 223902.08             | 21D       | VOI Eta B.1.525     | G            |
| LIB-0240  | 29 May          | Bong        | 54/M       | 16.01                | 100.00             | 193424.09             | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0242  | 29 May          | Montserrado | 23/F       | 22.93                | 99.99              | 18571.69              | 21D       | VOI Eta B.1.525     | G            |
| LIB-0244  | 29 May          | Montserrado | 38/M       | 19.90                | 100.00             | 15944.35              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0004  | 5 Jun           | Montserrado | 57/M       | 21                   | 100.00             | 132105.37             | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0007  | 5 Jun           | Montserrado | 67/F       | 21                   | 100.00             | 24117.24              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0071  | 5 Jun           | Montserrado | 28/M       | 28                   | 99.98              | 748.95                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0017  | 6 Jun           | Montserrado | 62/F       | 28                   | 99.94              | 302.55                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0018  | 6 Jun           | Montserrado | 41/M       | 24                   | 99.30              | 106.19                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0019  | 6 Jun           | Montserrado | 34/M       | 17                   | 99.90              | 359124.54             | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0021  | 6 Jun           | Montserrado | 56/F       | 22                   | 100.00             | 24466.47              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0022  | 6 Jun           | Montserrado | 37/F       | 25                   | 100.00             | 1307.05               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0026  | 6 Jun           | Montserrado | 38/M       | 19                   | 99.90              | 366820.93             | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0028  | 6 Jun           | Montserrado | 27/F       | 27                   | 99.94              | 797.2                 | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0032  | 6 Jun           | Margibi     | 46/F       | 23                   | 100.00             | 30961.5               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0064  | 8 Jun           | Montserrado | 40/F       | 28                   | 99.95              | 399.9                 | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0012  | 12 Jun          | Montserrado | 45/F       | 19                   | 100.00             | 12751.38              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0029  | 12 Jun          | Montserrado | 30/M       | 23                   | 100.00             | 6319.4                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0030  | 12 Jun          | Maryland    | 32/F       | 25                   | 100.00             | 7395.49               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0037  | 12 Jun          | Montserrado | 35/M       | 20                   | 100.00             | 2987.68               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0040  | 12 Jun          | Montserrado | 38/M       | 22                   | 100.00             | 40117.32              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0042  | 12 Jun          | Montserrado | 29/M       | 22                   | 100.00             | 23365.37              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0045  | 12 Jun          | Montserrado | 32/F       | 20                   | 100.00             | 10116.23              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0047  | 12 Jun          | Montserrado | 32/F       | 22                   | 100.00             | 46601.79              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0128  | 15 Jun          | Lofa        | 1/M        | 21                   | 100.00             | 29163.85              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0010  | 16 Jun          | Montserrado | 26/F       | 24                   | 100.00             | 9787.07               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0131  | 16 Jun          | Lofa        | 56/F       | 25                   | 100.00             | 1864.44               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0133  | 16 Jun          | Lofa        | 47/F       | 26                   | 99.99              | 65698.71              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0136  | 16 Jun          | Lofa        | 35/M       | 22                   | 99.98              | 1442.69               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0137  | 16 Jun          | Bomi        | 40/F       | 25                   | 0                  | NA                    | NA        | NA                  | NA           |
| LIB-0143  | 16 Jun          | Lofa        | 30/F       | 23                   | 99.95              | 5513                  | 21A       | VOC Delta B.1.617.2 | G            |

| Sample ID | Collection date | County      | Age, y/sex | C <sub>t</sub> value | % Genome recovered | Avg. depth/nucleotide | Nextclade | Variant†            | GISAID clade |
|-----------|-----------------|-------------|------------|----------------------|--------------------|-----------------------|-----------|---------------------|--------------|
| LIB-0118  | 17 Jun          | Montserrado | 41/M       | 19                   | 100.00             | 74762.42              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0121  | 17 Jun          | Montserrado | 82/F       | 30                   | 99.66              | 40                    | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0123  | 17 Jun          | Montserrado | 25/F       | 21                   | 100.00             | 10448.21              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0135  | 17 Jun          | Montserrado | 55/F       | 23                   | 99.97              | 598.15                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0099  | 18 Jun          | Montserrado | 2/F        | 21                   | 100.00             | 12031.71              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0124  | 18 Jun          | Montserrado | 25/F       | 29                   | 99.88              | 117.63                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0125  | 18 Jun          | Montserrado | 89/F       | 22                   | 100.00             | 13008.5               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0102  | 19 Jun          | Montserrado | 8/F        | 20                   | 100.00             | 10170.05              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0130  | 24 Jun          | Montserrado | 37/M       | 30                   | 71.32              | NA                    | NA        | NA                  | NA           |
| LIB-0134  | 24 Jun          | Montserrado | 62/F       | 28                   | 12.74              | NA                    | NA        | NA                  | NA           |
| LIB-0142  | 26 Jun          | Montserrado | 42/F       | 27                   | 5.53               | NA                    | NA        | NA                  | NA           |
| LIB-0147  | 26 Jun          | Montserrado | 36/M       | 30                   | 99.97              | 1970.45               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0069  | 27 Jun          | Montserrado | 48/F       | 19                   | 100.00             | 86159.99              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0111  | 7 Jul           | Montserrado | 11/F       | 29                   | 0.65               | 0.9                   | NA        | NA                  | NA           |
| LIB-0113  | 7 Jul           | Montserrado | 48/M       | 26                   | 1.65               | 0.86                  | NA        | NA                  | NA           |
| LIB-0073  | 8 Jul           | Montserrado | 31/F       | 29                   | 99.47              | 117.79                | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0074  | 8 Jul           | Montserrado | 47/M       | 24                   | 100.00             | 4168.52               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0076  | 8 Jul           | Montserrado | 51/F       | 22                   | 100.00             | 14232.36              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0078  | 8 Jul           | Margibi     | 54/F       | 23                   | 100.00             | 12901.34              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0093  | 8 Jul           | Montserrado | 48/M       | 27                   | 99.31              | 84.44                 | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0103  | 8 Jul           | Montserrado | 41/F       | 29                   | 0                  | NA                    | NA        | NA                  | NA           |
| LIB-0112  | 8 Jul           | Montserrado | 32/F       | 29                   | 0.67               | 1.67                  | NA        | NA                  | NA           |
| LIB-0084  | 9 Jul           | Nimba       | 67/M       | 27                   | 99.91              | 1228.28               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0085  | 9 Jul           | Nimba       | 59/M       | 22                   | 100.00             | 63134.43              | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0094  | 10 Jul          | Montserrado | 52/F       | 32                   | 99.93              | 1979.92               | 21A       | VOC Delta B.1.617.2 | G            |
| LIB-0101  | 20 Jul          | Montserrado | 64/M       | 31                   | 26.44              | NA                    | NA        | NA                  | NA           |

\*Twelve samples had insufficient genome coverage of average 15× depth/nucleotide. C<sub>t</sub>, cycle threshold; NA, not applicable; VOC, variant of concern; VOI, variant of interest. Sequencing data can be accessed using GISAID (<https://www.gisaid.org>) accession numbers EPI\_ISL\_3547663–705, EPI\_ISL\_3560291, and EPI\_ISL\_4232122–52).

†According to Phylogenetic Assignment of Named Global Outbreak Lineages (<https://cov-lineages.org>) software tool.



**Appendix Figure 1.** Daily coronavirus disease cases, Liberia, February 2020–September 2021. Blue lines indicate 7 day moving average of daily new cases. Data were derived from Worldometer (<https://www.worldometers.info/coronavirus/country/liberia>).



**Appendix Figure 2.** Sites from which nasopharyngeal swab samples were collected during a coronavirus disease case surge, Liberia, 2021. Red stars indicate locations inside counties; black star indicates the capital, Monrovia. Numbers of cases per county are indicated in parentheses.