**Supplementary Appendix**

**Supplementary Table 1. Spoligotyping results of 16,621 MTBC isolates from China.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Provinces | Reference | Total | L1 | | L3 | L2 | L4 | Beijing | | T1 | T2 | T3 | T4 | T5 | H1 | H3 | H4 | U | S | X1 | H37Rv | LAM1 | LAM3 | LAM | LAM7 | LAM8 | LAM9 | LAM10 | CAS | CAS-Delhi | MANU2 | BCG | New |
| Anhui | 1 | 236 | |  |  | 152 | 17 | | 152 | 9 | 4 | 2 |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  | 19 |  | 48 |
| Beijing | 2 | 1585 | |  | 1 | 1300 | 122 | | 1300 | 69 | 24 | 10 | 2 |  |  | 3 | 1 | 12 | 1 |  |  |  |  |  |  |  |  |  |  | 1 | 76 | 2 | 84 |
| Beijing | 3 | 260 | |  |  | 211 | 37 | | 211 | 27 | 7 | 1 |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12 |
| Beijing | 1 | 57 | |  |  | 47 | 8 | | 47 | 6 |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |
| Chongqing | 4 | 208 | |  |  | 156 | 25 | | 156 | 17 | 4 |  |  |  |  | 2 |  |  | 1 |  |  |  |  |  |  |  | 1 |  |  |  | 7 |  | 20 |
| Chongqing | 5 | 297 | |  |  | 198 | 77 | | 198 | 53 | 13 | 1 | 1 |  |  | 4 |  | 3 |  |  |  |  |  |  |  |  | 1 | 1 |  |  | 2 |  | 20 |
| Chongqing | 1 | 127 | |  | 2 | 67 | 37 | | 67 | 21 | 9 | 5 |  |  |  | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  |  |  | 21 |
| Fujian | 1 | 100 | |  | 4 | 30 | 27 | | 30 | 8 | 6 |  |  |  |  | 4 |  | 9 |  |  |  |  |  |  |  |  |  |  | 4 |  | 3 |  | 36 |
| Guangdong | 1 | 235 | |  |  | 75 | 63 | | 75 | 26 | 16 | 1 | 1 |  |  | 9 |  | 10 |  |  |  |  |  |  |  |  |  |  |  |  | 9 |  | 88 |
| Gansu | 6 | 467 | |  | 1 | 409 | 32 | | 409 | 20 | 3 | 2 |  |  |  |  | 5 | 2 |  |  |  |  |  |  |  |  |  |  |  | 1 | 3 |  | 22 |
| Gansu | 1 | 55 | |  |  | 47 | 6 | | 47 | 1 | 1 |  |  |  |  |  | 3 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |
| Guangxi | 1 | 108 | |  | 1 | 34 | 24 | | 34 | 20 | 3 |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | 12 |  | 37 |
| Guizhou | 1 | 149 | |  | 1 | 89 | 39 | | 89 | 20 | 5 | 7 |  | 1 | 3 |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 1 |  | 5 |  | 15 |
| Hainan | 1 | 13 | |  |  | 7 | 1 | | 7 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  | 3 |
| Hebei | 7 | 1017 | |  |  | 920 | 73 | | 920 | 39 | 15 | 5 | 1 | 1 |  | 7 |  | 1 |  |  |  | 1 |  |  |  |  | 3 |  |  |  | 7 |  | 17 |
| Hebei | 1 | 188 | |  |  | 155 | 9 | | 155 | 4 | 3 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 7 | 1 | 16 |
| Heilongjiang | 8 | 200 | |  |  | 189 | 11 | | 189 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Heilongjiang | 1 | 118 | |  | 2 | 96 | 9 | | 96 | 3 | 3 |  |  | 2 |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |  | 9 |
| Henan | 9 | 443 | |  |  | 387 | 52 | | 387 | 50 |  |  |  |  |  |  |  |  | 1 |  |  |  |  | 1 |  |  |  |  |  |  | 4 |  | 0 |
| Henan | 1 | 263 | |  | 1 | 213 | 26 | | 213 | 10 | 8 | 1 | 1 | 1 |  |  |  | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  | 12 |  | 11 |
| Hubei | 10 | 105 | |  |  | 86 | 19 | | 86 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hubei | 1 | 236 | |  | 1 | 168 | 27 | | 168 | 16 | 4 | 3 |  | 1 |  |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 1 |  | 26 |  | 14 |
| Hunan | 11 | 171 | |  | 1 | 126 | 38 | | 126 | 34 |  |  |  |  |  |  |  | 4 |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 5 |
| Hunan | 1 | 319 | |  | 7 | 155 | 104 | | 155 | 73 | 15 | 8 | 1 | 1 |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  | 7 |  | 9 |  | 44 |
| Jiangsu | 12 | 287 | |  |  | 233 | 38 | | 233 | 33 |  |  |  |  |  |  |  | 1 | 4 |  |  |  |  |  |  |  |  |  |  |  | 3 |  | 13 |
| Jiangsu | 13 | 497 | |  |  | 403 | 64 | | 403 | 42 | 15 | 1 |  | 3 |  |  |  |  | 2 |  |  |  |  |  |  |  |  | 1 |  |  | 20 |  | 10 |
| Jiangsu | 1 | 197 | |  | 3 | 134 | 32 | | 134 | 20 | 9 | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 |  | 10 |  | 18 |
| Jiangsu, Zhejiang | 14 | 209 | | 1 |  | 163 | 45 | | 163 | 32 |  |  |  |  |  |  |  | 5 |  |  |  |  |  | 8 |  |  |  |  |  |  |  |  |  |
| Jilin | 1 | 64 | |  | 1 | 49 | 8 | | 49 | 2 | 2 | 1 |  |  |  |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  | 6 |
| Jiangxi | 1 | 172 | |  | 2 | 111 | 23 | | 111 | 18 | 2 | 1 |  |  |  | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | 6 |  | 30 |
| Liaoning | 1 | 63 | |  | 1 | 48 | 4 | | 48 | 1 | 2 |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  | 7 |  | 3 |
| Inner Mongolia | 15 | 372 | |  |  | 318 | 23 | | 318 | 13 | 4 |  |  | 1 |  | 3 |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  | 1 |  | 30 |
| Inner Mongolia | 1 | 35 | |  |  | 31 | 2 | | 31 | 1 |  |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |
| Ningxia | 1 | 63 | |  | 1 | 52 | 7 | | 52 | 4 | 1 | 1 |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  | 1 |  | 0 |  | 3 |
| Qinghai | 1 | 41 | |  | 2 | 34 | 4 | | 34 | 1 | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 | 1 |  |  |
| Shaanxi | 16 | 89 | |  |  | 79 | 10 | | 79 | 4 |  |  |  |  |  | 1 |  |  | 1 | 1 | 1 |  |  |  |  |  | 1 | 1 |  |  |  |  |  |
| Shaanxi | 1 | 53 | |  |  | 36 | 9 | | 36 | 4 | 3 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  | 7 |
| Shandong Jiangsu | 17 | 1222 | | 8 | 8 | 967 | 178 | | 967 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 61 |
| Shandong | 1 | 235 | |  | 1 | 184 | 31 | | 184 | 9 | 11 | 1 |  |  |  |  |  | 10 |  |  |  |  |  |  |  |  |  |  | 1 |  | 2 |  | 17 |
| Shanxi | 1 | 117 | |  |  | 82 | 4 | | 82 | 3 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 17 |  | 14 |
| Shanghai | 1 | 62 | |  | 1 | 50 | 4 | | 50 | 3 |  |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  | 4 |  | 3 |
| Sichuan | 18 | 265 | |  |  | 143 | 96 | | 143 | 80 |  |  |  |  |  | 9 |  | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 26 |
| Sichuan | 19 | 213 | |  |  | 150 | 42 | | 150 | 39 |  |  |  |  |  | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9 |  | 12 |
| Sichuan | 20 | 306 | |  |  | 212 | 85 | | 212 | 57 |  |  |  |  |  | 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9 |
| Sichuan | 1 | 305 | |  | 4 | 138 | 87 | | 138 | 70 | 13 |  |  |  |  | 2 |  | 2 |  |  |  |  |  |  |  |  |  |  | 4 |  | 5 |  | 71 |
| Taiwan | 21 | 421 | | 120 |  | 176 | 104 | | 176 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 21 |
| Taiwan | 22 | 334 | | 91 | 0 | 116 | 110 | | 116 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 17 |
| Tianjin | 1 | 66 | |  | 0 | 57 | 3 | | 57 | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  | 1 |
| Tibet | 23 | 576 | |  | 18 | 522 | 27 | | 522 | 25 |  | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 18 |  |  |  | 9 |
| Tibet | 1 | 17 | |  | 1 | 12 | 2 | | 12 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  | 1 |
| Xinjiang | 1 | 133 | |  | 35 | 56 | 23 | | 56 | 12 | 1 |  |  |  |  | 1 | 8 |  |  |  |  |  |  |  |  |  |  |  |  |  | 17 |  | 2 |
| Yunnan | 1 | 55 | |  | 3 | 27 | 10 | | 27 | 6 |  | 1 | 1 | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6 |  | 9 |
| Zhejiang | 24 | 274 | |  |  | 251 | 20 | | 251 | 12 | 4 |  |  |  |  |  |  | 4 |  |  |  |  |  |  |  |  |  |  |  |  | 3 |  |  |
| Zhejiang | 1 | 135 | |  | 2 | 64 | 23 | | 64 | 15 | 4 | 1 |  |  |  | 1 |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  | 9 |  | 37 |
| 13 Provinces | 25 | 2346 | | 7 | 12 | 1738 | 494 | | 1738 | 219 | 74 | 23 | 12 | 3 | 11 | 74 | 10 | 38 | 8 | 2 | 2 |  | 1 |  | 2 | 2 | 10 | 3 | 7 | 5 | 38 |  | 57 |
| Whole country | 26 | 440 | | 0 | 1 | 349 | 75 | | 349 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15 |
| Total |  | 16621 | | 227 | 118 | 12302 | 2570 | | 12302 | 1257 | 292 | 84 | 21 | 17 | 14 | 144 | 27 | 134 | 19 | 3 | 3 | 1 | 2 | 9 | 2 | 2 | 16 | 6 | 56 | 10 | 371 | 3 | 1030 |

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**Supplementary Table 2. SNP typing result of 3,227 MTBC isolates randomly sampled from 70 county sites.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Province** | **Site No.** | **No. of Isolates** | **L2.1** | **L2.2** | **L2.3** | **L4.1** | **L4.2** | **L4.3** | **L4.4.1** | **L4.4.2** | **L4.5** | **L4.8** | **L4.11** | **L1** | **L3** |
| Anhui | 4 | 174 |  | 27 | 135 |  | 4 |  |  | 3 | 5 |  |  |  |  |
| Beijing | 1 | 52 |  | 10 | 34 |  | 2 |  |  | 0 | 6 |  |  |  |  |
| Chongqing | 2 | 84 |  | 13 | 44 |  | 9 |  |  | 6 | 11 |  | 1 |  |  |
| Fujian | 2 | 77 |  | 13 | 41 | 1 | 2 |  |  | 7 | 13 |  |  |  |  |
| Gansu | 1 | 82 |  | 27 | 51 |  | 0 |  |  | 1 | 2 |  |  |  | 1 |
| Guangdong | 4 | 175 |  | 26 | 97 |  | 10 |  | 1 | 26 | 14 |  |  | 1 |  |
| Guangxi | 2 | 62 | 5 | 21 | 18 |  | 5 |  |  | 8 | 5 |  |  |  |  |
| Guizhou | 2 | 85 |  | 30 | 36 |  | 2 |  |  | 5 | 12 |  |  |  |  |
| Hainan | 1 | 13 |  | 6 | 5 |  | 0 |  |  | 1 | 1 |  |  |  |  |
| Hebei | 3 | 143 |  | 21 | 110 |  | 0 |  |  | 3 | 9 |  |  |  |  |
| Heilongjiang | 2 | 86 |  | 12 | 65 |  | 1 |  |  | 5 | 3 |  |  |  |  |
| Henan | 5 | 263 |  | 57 | 176 |  | 6 |  |  | 11 | 12 |  |  |  | 1 |
| Hubei | 4 | 158 |  | 29 | 111 |  | 2 |  |  | 5 | 11 |  |  |  |  |
| Hunan | 5 | 208 |  | 50 | 86 |  | 14 |  |  | 28 | 30 |  |  |  |  |
| Inner Mongolia | 1 | 64 |  | 9 | 51 |  | 0 |  |  | 2 | 2 |  |  |  |  |
| Jiangsu | 4 | 201 |  | 35 | 129 |  | 9 |  |  | 15 | 13 |  |  |  |  |
| Jiangxi | 3 | 142 |  | 13 | 106 |  | 7 |  |  | 6 | 10 |  |  |  |  |
| Jilin | 1 | 53 |  | 5 | 41 |  | 0 |  |  | 5 | 2 |  |  |  |  |
| Liaoning | 1 | 59 |  | 9 | 47 |  | 0 |  |  | 1 | 2 |  |  |  |  |
| Ningxia | 1 | 90 |  | 48 | 31 |  | 0 |  |  | 2 | 8 | 1 |  |  |  |
| Qinghai | 1 | 63 |  | 29 | 24 |  | 1 |  |  | 2 | 6 |  |  |  | 1 |
| Shaanxi | 1 | 97 |  | 34 | 39 |  | 0 |  |  | 9 | 13 |  |  |  | 2 |
| Shandong | 4 | 169 |  | 19 | 133 |  | 3 |  |  | 7 | 7 |  |  |  |  |
| Shanghai | 1 | 57 |  | 14 | 36 |  | 0 |  |  | 3 | 4 |  |  |  |  |
| Shanxi | 2 | 89 |  | 10 | 68 |  | 3 |  |  | 0 | 8 |  |  |  |  |
| Sichuan | 5 | 168 | 2 | 40 | 59 |  | 12 |  |  | 14 | 41 |  |  |  |  |
| Tianjin | 1 | 64 |  | 2 | 59 |  | 1 |  |  | 1 | 1 |  |  |  |  |
| Tibet | 1 | 9 |  | 6 | 2 |  | 0 |  |  | 1 | 0 |  |  |  |  |
| Xinjiang | 2 | 115 |  | 33 | 37 |  | 0 | 2 |  | 0 | 22 |  |  |  | 21 |
| Yunnan | 1 | 36 |  | 13 | 11 |  | 2 |  |  | 0 | 10 |  |  |  |  |
| Zhejiang | 2 | 89 | 1 | 26 | 49 |  | 4 |  |  | 4 | 5 |  |  |  |  |
| Whole country | 70 | 3227 | 8 | 687 | 1931 | 1 | 99 | 2 | 1 | 181 | 288 | 1 | 1 | 1 | 26 |

**Supplementary Table 3. SNP typing result of 1,351 MTBC isolates sampled from whole population approach in six county sites.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Province** | **County Name** | **Longitude** | **Latitude** | **No. of Isolates** | **L2.1** | **L2.2** | **L2.3** | **L4.5** | **L4.2** | **L4.4** | **L4.8** | **L4.1** | **L4.11** | **L1** |
| Guangxi | Baise | 23.00 | 108.00 | 174 |  | 49 | 58 | 16 | 16 | 34 |  | 1 |  |  |
| Heilongjiang | Wuchang | 44.00 | 126.01 | 183 |  | 12 | 146 | 15 |  | 10 |  |  |  |  |
| Henan | Weishi | 34.41 | 114.17 | 194 |  | 44 | 130 | 8 | 9 | 3 |  |  |  |  |
| Sichuan | Wusheng | 30.00 | 106.00 | 214 | 2 | 47 | 65 | 44 | 17 | 33 | 1 |  | 5 |  |
| Shandong | Feixian | 35.26 | 117.97 | 201 |  | 25 | 134 | 19 | 4 | 17 |  | 1 |  | 1 |
| Shanghai | Songshi | 31.00 | 121.00 | 385 |  | 80 | 233 | 24 | 22 | 24 |  |  | 1 | 1 |
| All |  |  |  | 1351 | 2 | 257 | 766 | 126 | 68 | 121 | 1 | 2 | 6 | 2 |

**Supplementary Table 4. SNP typing results of MTBC isolates from Global regions using published whole-genome sequencing data.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sublineage | Belarus | Vietnam | Uzbekistan | UK | Serria Leone | South Africa | Mali | Malawi | Inuit | India | Greenland | Germany | Russia | Ethiopia | China |
| lineage1.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage1.1.1 | 0 | 46 | 0 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 5 | 2 | 3 | 0 |
| lineage1.1.1.1 | 0 | 318 | 0 | 3 | 0 | 0 | 0 | 73 | 0 | 0 | 0 | 8 | 1 | 0 | 0 |
| lineage1.1.2 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 182 | 0 | 238 | 0 | 12 | 2 | 0 | 0 |
| lineage1.1.3 | 0 | 0 | 0 | 42 | 0 | 1 | 0 | 0 | 0 | 12 | 0 | 4 | 1 | 0 | 0 |
| lineage1.2.1 | 0 | 23 | 0 | 44 | 0 | 0 | 0 | 98 | 0 | 6 | 0 | 18 | 0 | 0 | 1 |
| lineage1.2.2 | 0 | 0 | 0 | 59 | 0 | 8 | 0 | 0 | 0 | 62 | 0 | 3 | 0 | 0 | 0 |
| lineage2.1 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 16 |
| lineage2.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage2.2.1 | 373 | 795 | 446 | 104 | 2 | 87 | 5 | 0 | 0 | 47 | 0 | 56 | 738 | 2 | 892 |
| lineage2.2.1.1 | 0 | 155 | 0 | 11 | 0 | 9 | 0 | 0 | 0 | 8 | 0 | 4 | 1 | 0 | 72 |
| lineage2.2.1.2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 0 | 0 |
| lineage2.2.2 | 0 | 39 | 0 | 4 | 0 | 4 | 0 | 201 | 0 | 0 | 0 | 3 | 1 | 0 | 53 |
| lineage3.1.1 | 0 | 0 | 0 | 108 | 0 | 9 | 0 | 5 | 0 | 0 | 0 | 5 | 1 | 0 | 0 |
| lineage3.1.2 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 3 | 0 | 0 | 0 |
| lineage3.1.2.1 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 2 | 0 | 0 | 0 |
| lineage3.1.2.2 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage4.1 | 4 | 0 | 0 | 10 | 10 | 5 | 169 | 0 | 0 | 0 | 0 | 12 | 17 | 10 | 0 |
| lineage4.1.1 | 0 | 0 | 0 | 2 | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.1.1.1 | 0 | 0 | 0 | 70 | 1 | 14 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 0 |
| lineage4.1.1.2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 55 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.1.1.3 | 0 | 0 | 0 | 153 | 4 | 40 | 3 | 82 | 0 | 2 | 0 | 4 | 0 | 4 | 1 |
| lineage4.1.2 | 0 | 15 | 0 | 16 | 0 | 16 | 4 | 24 | 154 | 0 | 0 | 23 | 28 | 0 | 0 |
| lineage4.1.2.1 | 26 | 42 | 11 | 86 | 10 | 33 | 20 | 0 | 0 | 4 | 0 | 205 | 44 | 10 | 0 |
| lineage4.2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 |
| lineage4.2.1 | 35 | 0 | 12 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 19 | 108 | 0 | 1 |
| lineage4.2.2 | 0 | 31 | 0 | 46 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 26 |
| lineage4.2.2.1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 24 | 0 | 0 | 0 |
| lineage4.3 | 53 | 1 | 3 | 12 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 3 | 1 | 0 |
| lineage4.3.1 | 0 | 2 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| lineage4.3.2 | 0 | 1 | 0 | 5 | 0 | 16 | 0 | 12 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| lineage4.3.2.1 | 0 | 0 | 0 | 6 | 0 | 63 | 0 | 36 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.3.3 | 54 | 3 | 19 | 25 | 8 | 15 | 0 | 0 | 0 | 0 | 1 | 24 | 88 | 8 | 0 |
| lineage4.3.4 | 0 | 0 | 0 | 3 | 0 | 6 | 0 | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage4.3.4.1 | 0 | 0 | 0 | 13 | 0 | 3 | 0 | 15 | 0 | 0 | 0 | 11 | 4 | 0 | 1 |
| lineage4.3.4.2 | 0 | 0 | 0 | 10 | 3 | 11 | 0 | 952 | 0 | 0 | 0 | 10 | 4 | 3 | 0 |
| lineage4.3.4.2.1 | 0 | 0 | 0 | 27 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.4.1 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 27 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| lineage4.4.1.1 | 0 | 4 | 4 | 16 | 1 | 43 | 0 | 11 | 0 | 2 | 27 | 18 | 5 | 1 | 0 |
| lineage4.4.1.2 | 0 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 |
| lineage4.4.2 | 0 | 35 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 101 |
| lineage4.5 | 0 | 33 | 2 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 1 | 0 | 160 |
| lineage4.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage4.6.1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage4.6.1.1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 13 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| lineage4.6.1.2 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| lineage4.6.2 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| lineage4.6.2.1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| lineage4.6.2.2 | 0 | 3 | 0 | 23 | 3 | 0 | 23 | 10 | 0 | 0 | 0 | 26 | 1 | 3 | 0 |
| lineage4.7 | 8 | 1 | 0 | 10 | 0 | 5 | 4 | 42 | 0 | 0 | 0 | 34 | 3 | 0 | 0 |
| lineage4.8 | 32 | 16 | 22 | 166 | 11 | 27 | 0 | 0 | 11 | 2 | 231 | 145 | 102 | 11 | 2 |
| lineage4.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LINEAGEBOV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LINEAGEBOV\_AFRI | 0 | 0 | 0 | 0 | 18 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 18 | 0 |

**Supplementary Table X**