**Supplementary Table 1: Primers used for whole genome amplification of 2019 novel coronavirus.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Primer code** | **Sequence (5'-3')** | **Start** | **Stop** | **Targeted gene region** |
| 5’RACE-1 | AGTGCACTCACGCAGTAT | 113 | 130 | UTR |
| 5’RACE-2 | CTGTCGTTGACAGGACACGAGTAA | 147 | 170 |
| 5’RACE-3 | CGATCATCAGCACATCTAGG | 218 | 237 |
| B1 | F: TGTCGTTGACAGGACACGAG | 148 | 167 | ORF1a |
| R: TAACAAAATCGCCCGTCTGC | 1277 | 1258 |
| B2 | F: GTCTATCCAGTTGCGTCACCA | 1172 | 1192 | ORF1a |
| R: TCCACCGACAATTTCACAAGC | 2251 | 2231 |
| B3 | F: AACCCGTCCTTGATTGGCTT | 2139 | 2158 | ORF1a |
| R: TGATTGTCCTCACTGCCGTC | 3258 | 3239 |
| B4 | F: GCCACTTCTGCTGCTCTTCA | 3155 | 3174 | ORF1a |
| R: TTTCAGTAGTGCCACCAGCC | 4199 | 4180 |
| B5 | F: GGGTGATGTTGTTCAAGAGGG | 4126 | 4146 | ORF1a |
| R: AGCCTCAACACGTAGAGTGTC | 5158 | 5138 |
| B6 | F: GGACAACAGTTTGGTCCAACTTA | 5036 | 5058 | ORF1a |
| R: AGCTTGCGTTTGGATATGGTTG | 6038 | 6017 |
| B7 | F: CAAAGTCCTCAGAATACAAAGGTCC | 5826 | 5850 | ORF1a |
| R: GCCTCTAGACAAAATTTACCGACA | 6903 | 6880 |
| B8 | F: ACGCGCAGGGAATGGATAAT | 6360 | 6379 | ORF1a |
| R: ACCATAGCTGAAATCGGGGC | 7407 | 7388 |
| B9 | F: TGGATTGGCTGCAATCATGC | 7288 | 7307 | ORF1a |
| R: ATGACGCGCACTACAGTCAA | 8359 | 8340 |
| B10 | F: TGCAACTGCAGAAGCTGAAC | 8104 | 8123 | ORF1a |
| R: TTTCACAAGTGCCGTGCCTA | 9236 | 9217 |
| B11 | F: TCAGCTTGTGTTTTGGCTGC | 8996 | 9015 | ORF1a |
| R: CGTCATCAAGCCAAAGACCG | 10157 | 10138 |
| B12 | F: GCTGCTTGTTGTCATCTCGC | 9950 | 9969 | ORF1a |
| R: CAACCAGTGGTGTGTACCCT | 11014 | 10995 |
| B13 | F: CCTCTTTCTGCTCAAACTGGAA | 10808 | 10829 | ORF1a |
| R: GTGTAACTGGACACATTGAGCC | 11950 | 11929 |
| B14 | F: TCACAGGGACTACTCCCACC | 11738 | 11757 | ORF1a |
| R: TGTAGTACCGGCAGCACAAG | 12742 | 12723 |
| B15 | F: AGGGCCAATTCTGCTGTCAA | 12659 | 12678 | ORF1a, RdRP |
| R: AGACGAGGTCTGCCATTGTG | 13825 | 13806 |
| B16 | F: GTGGGGGACAACCAATCACT | 13122 | 13141 | RdRP |
| R: CAGGAACTCCACTACCTGGC | 14137 | 14118 |
| B17 | F: TGATGCCATGCGAAATGCTG | 14019 | 14038 | RdRP |
| R: GCTACGGTGCGAGCTCTATT | 15113 | 15094 |
| B18 | F: ACCAAGTCATCGTCAACAACCT | 14912 | 14933 | RdRP |
| R: ATCTACAAAACAGCCGGCCC | 15975 | 15956 |
| B19 | F: TGTTGGACTGAGACTGACCTT | 15835 | 15855 | RdRP, ORF1b |
| R: CGGTAAACAACAGCATCACCA | 16871 | 16851 |
| B20 | F: TGCAGCAGAAACGCTCAAAG | 16635 | 16654 | ORF1b |
| R: CTCCAAGCAGGGTTACGTGT | 17756 | 17737 |
| B21 | F: TGTTCCTCGGAACTTGTCGG | 17543 | 17562 | ORF1b |
| R: CAACTCAAAGCCATGTGCCC | 18615 | 18596 |
| B22 | F: TAGTGCTAAACCACCGCCTG | 18447 | 18466 | ORF1b |
| R: TGTCTACAGACAGCACCACC | 19496 | 19477 |
| B23 | F: CATGCATTCCACACACCAGC | 19309 | 19328 | ORF1b |
| R: TGAACCTGTTTGCGCATCTG | 20481 | 20462 |
| B24 | F: AGGCTATGCCTTCGAACATATC | 20304 | 20325 | ORF1b |
| R: CGCGTGGTTTGCCAAGATAA | 21307 | 21288 |
| B25 | F: CTTGGAGGTTCCGTGGCTAT | 21145 | 21164 | S |
| R: AAACCCTGAGGGAGATCACG | 22221 | 22202 |
| B26 | F: TATCTTGGCAAACCACGCGA | 21289 | 21308 | S |
| R: ACCAGCTGTCCAACCTGAAG | 22345 | 22326 |
| B27 | F: CCCTCAGGGTTTTTCGGCTT | 22210 | 22229 | S |
| R: CTGTGGATCACGGACAGCAT | 23302 | 23283 |
| B28 | F: CCAGCAACTGTTTGTGGACC | 23123 | 23142 | S |
| R: GTGGCAAAACAGTAAGGCCG | 24149 | 24130 |
| B29 | F: ACTTGCAGATGCTGGCTTCA | 24043 | 24062 | S |
| R: CTCATTGAGGCGGTCAATTTCT | 25126 | 25105 |
| B30 | F: TGATTTAGGTGACATCTCTGGCA | 25054 | 25076 | S |
| R: ACAACTCCGGATGAACCGTC | 26159 | 26140 |
| B31 | F: GCTGGCTTGATTGCCATAGT | 25226 | 25245 | S, ORF3 |
| R: ACAATCGAAGCGCAGTAAGG | 26362 | 26343 |
| B32 | F: ACGGTTCATCCGGAGTTGTT | 26141 | 26160 | E |
| R: TAGTACCGTTGGAATCTGCCAT | 26544 | 26523 |
| B33 | F: TCGATTGTGTGCGTACTGCT | 26355 | 26374 | M |
| R: AGCTCACAAGTAGCGAGTGT | 27443 | 27424 |
| B34 | F: ACAGTCGCTACAGGATTGGC | 27109 | 27128 | M, ORF6, 7, 8 |
| R: CCCACTGCGTTCTCCATTCT | 28375 | 28356 |
| B35 | F: GAATTGTGCGTGGATGAGGC | 28068 | 28087 | N |
| R: CGTTCCCGAAGGTGTGACTT | 29260 | 29241 |
| B36 | F: CTACGCAGAAGGGAGCAGAG | 28786 | 28805 | N, ORF9b |
| R: TAGGCAGCTCTCCCTAGCAT | 29790 | 29771 |
| 3’RACE-1 | GTCTACTCTTGTGCAGAATG | 29601 | 29620 | UTR |
| 3’RACE-2 | GAGAGCTGCCTATATGGAAG | 29779 | 29798 |

Reference sequence IPBCAMS-WH-01/2019, no. EPI\_ISL\_402123. RACE: Rapid amplification of cDNA end. UTR: Untranslated Regions; ORF: Open reading frame; S: spike; E: envelope; M: membrane; N: nucleocapsid.