**Supplementary Table 7.** The evolutionary divergence between 16S rRNA gene of *Borrelia*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| 1 | **B. miyamotoi, OL376738** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | **B. miyamotoi, OL376739** | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | B. miyamotoi, LC557150 | 0.022 | 0.018 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | B. miyamotoi, KU749373 | 0.022 | 0.018 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | B. miyamotoi, MT186168 | 0.022 | 0.018 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | B. miyamotoi, OM033639 | 0.018 | 0.014 | 0.012 | 0.012 | 0.012 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | B. miyamotoi, KJ847049 | 0.018 | 0.014 | 0.012 | 0.012 | 0.012 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | B. miyamotoi, LC164108 | 0.018 | 0.014 | 0.004 | 0.004 | 0.004 | 0.012 | 0.012 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | B. miyamotoi, KP202175 | 0.016 | 0.012 | 0.014 | 0.014 | 0.014 | 0.002 | 0.002 | 0.014 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | B. venezuelensis, MG651649 | 0.022 | 0.018 | 0.024 | 0.024 | 0.024 | 0.016 | 0.016 | 0.020 | 0.018 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | B. parkeri, CP007022 | 0.022 | 0.018 | 0.024 | 0.024 | 0.024 | 0.016 | 0.016 | 0.020 | 0.018 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | B. parkeri, CP005851 | 0.022 | 0.018 | 0.024 | 0.024 | 0.024 | 0.016 | 0.016 | 0.020 | 0.018 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | B. turicatae, CP015629 | 0.022 | 0.018 | 0.024 | 0.024 | 0.024 | 0.016 | 0.016 | 0.020 | 0.018 | 0.000 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | B. turicatae, CP073176 | 0.022 | 0.018 | 0.024 | 0.024 | 0.024 | 0.016 | 0.016 | 0.020 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | B. hispanica, GU350706 | 0.024 | 0.020 | 0.034 | 0.034 | 0.034 | 0.024 | 0.024 | 0.030 | 0.022 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | B. crocidurae, GQ358198 | 0.024 | 0.020 | 0.030 | 0.030 | 0.030 | 0.022 | 0.022 | 0.026 | 0.024 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | B. duttonii, GU350711 | 0.022 | 0.018 | 0.032 | 0.032 | 0.032 | 0.024 | 0.024 | 0.028 | 0.022 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.002 | 0.002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | B. duttonii, AF107363 | 0.022 | 0.018 | 0.032 | 0.032 | 0.032 | 0.024 | 0.024 | 0.028 | 0.022 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.002 | 0.002 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | B. microti, JF681792 | 0.024 | 0.020 | 0.034 | 0.034 | 0.034 | 0.026 | 0.026 | 0.030 | 0.024 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.004 | 0.004 | 0.002 | 0.002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | B. hermsii, CP086371 | 0.024 | 0.020 | 0.026 | 0.026 | 0.026 | 0.018 | 0.018 | 0.022 | 0.020 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.016 | 0.012 | 0.014 | 0.014 | 0.016 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | B. hermsii, GU350714 | 0.024 | 0.020 | 0.026 | 0.026 | 0.026 | 0.018 | 0.018 | 0.022 | 0.020 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.016 | 0.012 | 0.014 | 0.014 | 0.016 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | B. anserina, CP013704 | 0.032 | 0.028 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.022 | 0.028 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.024 | 0.020 | 0.022 | 0.022 | 0.024 | 0.016 | 0.016 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | B. anserina, U42284 | 0.034 | 0.030 | 0.028 | 0.028 | 0.028 | 0.028 | 0.028 | 0.024 | 0.030 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.022 | 0.018 | 0.020 | 0.020 | 0.022 | 0.018 | 0.018 | 0.002 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | B. sinica, AB022146 | 0.038 | 0.034 | 0.040 | 0.040 | 0.040 | 0.038 | 0.038 | 0.036 | 0.036 | 0.028 | 0.028 | 0.028 | 0.028 | 0.028 | 0.028 | 0.030 | 0.028 | 0.028 | 0.030 | 0.026 | 0.026 | 0.020 | 0.022 |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 | B. burgdorferi ss, AJ224137 | 0.036 | 0.032 | 0.042 | 0.042 | 0.042 | 0.036 | 0.036 | 0.038 | 0.034 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.022 | 0.024 | 0.022 | 0.022 | 0.024 | 0.024 | 0.024 | 0.026 | 0.028 | 0.010 |  |  |  |  |  |  |  |  |  |  |  |
| 26 | B. burgdorferi ss, DQ111062 | 0.036 | 0.032 | 0.042 | 0.042 | 0.042 | 0.036 | 0.036 | 0.038 | 0.034 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.022 | 0.024 | 0.022 | 0.022 | 0.024 | 0.024 | 0.024 | 0.026 | 0.028 | 0.010 | 0.000 |  |  |  |  |  |  |  |  |  |  |
| 27 | B. bavariensis, NR074854 | 0.040 | 0.036 | 0.046 | 0.046 | 0.046 | 0.044 | 0.044 | 0.042 | 0.042 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.040 | 0.038 | 0.038 | 0.040 | 0.036 | 0.036 | 0.038 | 0.040 | 0.020 | 0.018 | 0.018 |  |  |  |  |  |  |  |  |  |
| 28 | B. turdi, D67024 | 0.046 | 0.042 | 0.044 | 0.044 | 0.044 | 0.042 | 0.042 | 0.044 | 0.040 | 0.032 | 0.032 | 0.032 | 0.032 | 0.032 | 0.032 | 0.034 | 0.032 | 0.032 | 0.034 | 0.034 | 0.034 | 0.032 | 0.030 | 0.018 | 0.016 | 0.016 | 0.022 |  |  |  |  |  |  |  |  |
| 29 | B. bissettii, NR102956 | 0.032 | 0.028 | 0.038 | 0.038 | 0.038 | 0.036 | 0.036 | 0.034 | 0.034 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.028 | 0.026 | 0.026 | 0.028 | 0.024 | 0.024 | 0.026 | 0.028 | 0.012 | 0.006 | 0.006 | 0.012 | 0.014 |  |  |  |  |  |  |  |
| 30 | B. bissettii, NR148750 | 0.032 | 0.028 | 0.038 | 0.038 | 0.038 | 0.036 | 0.036 | 0.034 | 0.034 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.028 | 0.026 | 0.026 | 0.028 | 0.024 | 0.024 | 0.026 | 0.028 | 0.012 | 0.006 | 0.006 | 0.012 | 0.014 | 0.000 |  |  |  |  |  |  |
| 31 | B. afzelii, NR115207 | 0.050 | 0.046 | 0.044 | 0.044 | 0.044 | 0.042 | 0.042 | 0.040 | 0.040 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.040 | 0.042 | 0.040 | 0.040 | 0.042 | 0.034 | 0.034 | 0.032 | 0.034 | 0.018 | 0.020 | 0.020 | 0.022 | 0.020 | 0.018 | 0.018 |  |  |  |  |  |
| 32 | B. afzelii, DQ111060 | 0.048 | 0.044 | 0.042 | 0.042 | 0.042 | 0.040 | 0.040 | 0.038 | 0.038 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.038 | 0.040 | 0.038 | 0.038 | 0.040 | 0.032 | 0.032 | 0.030 | 0.032 | 0.016 | 0.018 | 0.018 | 0.020 | 0.018 | 0.016 | 0.016 | 0.002 |  |  |  |  |
| 33 | B. afzelii, AY574639 | 0.048 | 0.044 | 0.042 | 0.042 | 0.042 | 0.040 | 0.040 | 0.038 | 0.038 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.038 | 0.040 | 0.038 | 0.038 | 0.040 | 0.032 | 0.032 | 0.030 | 0.032 | 0.016 | 0.018 | 0.018 | 0.020 | 0.018 | 0.016 | 0.016 | 0.002 | 0.000 |  |  |  |
| 34 | B. garinii, LT631693 | 0.038 | 0.034 | 0.044 | 0.044 | 0.044 | 0.042 | 0.042 | 0.040 | 0.040 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.036 | 0.038 | 0.036 | 0.036 | 0.038 | 0.034 | 0.034 | 0.036 | 0.038 | 0.022 | 0.016 | 0.016 | 0.006 | 0.024 | 0.010 | 0.010 | 0.024 | 0.022 | 0.022 |  |  |
| 35 | B. garinii, AM418453 | 0.036 | 0.032 | 0.042 | 0.042 | 0.042 | 0.040 | 0.040 | 0.038 | 0.038 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.036 | 0.034 | 0.034 | 0.036 | 0.032 | 0.032 | 0.034 | 0.036 | 0.020 | 0.014 | 0.014 | 0.008 | 0.022 | 0.008 | 0.008 | 0.022 | 0.020 | 0.020 | 0.002 |  |
| 36 | B. japonica, L46696 | 0.044 | 0.040 | 0.050 | 0.050 | 0.050 | 0.044 | 0.044 | 0.046 | 0.042 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.036 | 0.034 | 0.034 | 0.036 | 0.036 | 0.036 | 0.038 | 0.036 | 0.018 | 0.016 | 0.016 | 0.018 | 0.020 | 0.018 | 0.018 | 0.016 | 0.014 | 0.014 | 0.020 | 0.018 |