**Supplementary Table 8.** The evolutionary divergence between 23S 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 | 36 | 37 |
| 1 | **B. miyamotoi, OL376741** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | **B. miyamotoi, OL376742** | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | B. miyamotoi, CP017126 | 0.017 | 0.021 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | B. miyamotoi, AP024398 | 0.025 | 0.029 | 0.008 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | B. miyamotoi, AP024395 | 0.025 | 0.029 | 0.008 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | B. miyamotoi, AP024394 | 0.025 | 0.029 | 0.008 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | B. miyamotoi, MK961312 | 0.021 | 0.025 | 0.004 | 0.004 | 0.004 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | B. miyamotoi, MK961314 | 0.021 | 0.025 | 0.004 | 0.004 | 0.004 | 0.004 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | B. coriaceae, CP075076 | 0.029 | 0.033 | 0.012 | 0.021 | 0.021 | 0.021 | 0.017 | 0.017 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | B. coriaceae, NR121982 | 0.029 | 0.033 | 0.012 | 0.021 | 0.021 | 0.021 | 0.017 | 0.017 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | B. anserina, NR121981 | 0.037 | 0.041 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | B. anserina, CP013704 | 0.037 | 0.041 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | B. hermsii, NR103187 | 0.037 | 0.041 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.017 | 0.017 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | B. hermsii, CP011060 | 0.038 | 0.042 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.017 | 0.017 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | B. parkeri, CP073159 | 0.033 | 0.037 | 0.017 | 0.025 | 0.025 | 0.025 | 0.021 | 0.021 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.013 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | B. parkeri, NR121983 | 0.033 | 0.037 | 0.017 | 0.025 | 0.025 | 0.025 | 0.021 | 0.021 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.013 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | B. turicatae, CP073176 | 0.038 | 0.042 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.017 | 0.017 | 0.008 | 0.008 | 0.004 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | B. turicatae, NR103185 | 0.037 | 0.041 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.017 | 0.017 | 0.008 | 0.008 | 0.004 | 0.004 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | B. venezuelensis, CP073220 | 0.037 | 0.041 | 0.021 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.017 | 0.017 | 0.017 | 0.017 | 0.008 | 0.008 | 0.004 | 0.004 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | Borrelia sp., CP088943 | 0.033 | 0.037 | 0.025 | 0.033 | 0.033 | 0.033 | 0.029 | 0.029 | 0.021 | 0.021 | 0.012 | 0.012 | 0.021 | 0.021 | 0.017 | 0.017 | 0.021 | 0.021 | 0.021 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | Borrelia sp., CP086555 | 0.033 | 0.038 | 0.025 | 0.033 | 0.033 | 0.033 | 0.029 | 0.029 | 0.021 | 0.021 | 0.013 | 0.013 | 0.021 | 0.021 | 0.017 | 0.017 | 0.021 | 0.021 | 0.021 | 0.008 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | Borrelia sp., CP043682 | 0.038 | 0.042 | 0.029 | 0.038 | 0.038 | 0.038 | 0.033 | 0.033 | 0.025 | 0.025 | 0.025 | 0.025 | 0.017 | 0.017 | 0.021 | 0.021 | 0.017 | 0.017 | 0.017 | 0.012 | 0.012 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | Ca.B.tachyglossi, CP025785 | 0.037 | 0.041 | 0.029 | 0.037 | 0.037 | 0.037 | 0.033 | 0.033 | 0.025 | 0.025 | 0.017 | 0.017 | 0.025 | 0.025 | 0.021 | 0.021 | 0.025 | 0.025 | 0.025 | 0.004 | 0.012 | 0.017 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | B. valaisiana, CP009117 | 0.058 | 0.062 | 0.050 | 0.050 | 0.050 | 0.050 | 0.046 | 0.046 | 0.041 | 0.041 | 0.050 | 0.050 | 0.050 | 0.050 | 0.046 | 0.046 | 0.050 | 0.050 | 0.050 | 0.037 | 0.038 | 0.042 | 0.041 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 | B. chilensis, CP009910 | 0.066 | 0.071 | 0.058 | 0.058 | 0.058 | 0.058 | 0.054 | 0.054 | 0.050 | 0.050 | 0.058 | 0.058 | 0.058 | 0.058 | 0.054 | 0.054 | 0.058 | 0.058 | 0.058 | 0.046 | 0.046 | 0.050 | 0.050 | 0.008 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 | B. mayonii, CP015796 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.012 |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 | B. mayonii, CP015780 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.012 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |
| 28 | B. burgdorferi ss, CP019767 | 0.075 | 0.079 | 0.066 | 0.066 | 0.066 | 0.066 | 0.062 | 0.062 | 0.058 | 0.058 | 0.066 | 0.066 | 0.066 | 0.067 | 0.062 | 0.062 | 0.067 | 0.066 | 0.066 | 0.054 | 0.054 | 0.058 | 0.058 | 0.017 | 0.008 | 0.004 | 0.004 |  |  |  |  |  |  |  |  |  |  |
| 29 | B. burgdorferi ss, M88330 | 0.075 | 0.079 | 0.066 | 0.066 | 0.066 | 0.066 | 0.062 | 0.062 | 0.058 | 0.058 | 0.066 | 0.066 | 0.066 | 0.067 | 0.062 | 0.062 | 0.067 | 0.066 | 0.066 | 0.054 | 0.054 | 0.058 | 0.058 | 0.017 | 0.008 | 0.004 | 0.004 | 0.000 |  |  |  |  |  |  |  |  |  |
| 30 | B. bissettii, CP002746 | 0.071 | 0.075 | 0.062 | 0.062 | 0.062 | 0.062 | 0.058 | 0.058 | 0.054 | 0.054 | 0.062 | 0.062 | 0.062 | 0.063 | 0.058 | 0.058 | 0.063 | 0.062 | 0.062 | 0.050 | 0.050 | 0.054 | 0.054 | 0.021 | 0.012 | 0.008 | 0.008 | 0.004 | 0.004 |  |  |  |  |  |  |  |  |
| 31 | B. bissettii, NR103177 | 0.071 | 0.075 | 0.062 | 0.062 | 0.062 | 0.062 | 0.058 | 0.058 | 0.054 | 0.054 | 0.062 | 0.062 | 0.062 | 0.063 | 0.058 | 0.058 | 0.063 | 0.062 | 0.062 | 0.050 | 0.050 | 0.054 | 0.054 | 0.021 | 0.012 | 0.008 | 0.008 | 0.004 | 0.004 | 0.000 |  |  |  |  |  |  |  |
| 32 | B. garinii, NR076348 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.062 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.021 | 0.017 | 0.017 | 0.012 | 0.012 | 0.017 | 0.017 |  |  |  |  |  |  |
| 33 | B. garinii, CP018744 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.062 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.021 | 0.017 | 0.017 | 0.012 | 0.012 | 0.017 | 0.017 | 0.000 |  |  |  |  |  |
| 34 | B. afzelii, NR076995 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.021 | 0.008 | 0.008 | 0.012 | 0.012 | 0.017 | 0.017 | 0.008 | 0.008 |  |  |  |  |
| 35 | B. afzelii, CP009058 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.062 | 0.062 | 0.071 | 0.071 | 0.071 | 0.071 | 0.066 | 0.066 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.062 | 0.021 | 0.021 | 0.008 | 0.008 | 0.012 | 0.012 | 0.017 | 0.017 | 0.008 | 0.008 | 0.000 |  |  |  |
| 36 | B. maritima, CP044535 | 0.075 | 0.079 | 0.066 | 0.066 | 0.066 | 0.066 | 0.062 | 0.062 | 0.058 | 0.058 | 0.066 | 0.066 | 0.066 | 0.067 | 0.062 | 0.062 | 0.067 | 0.066 | 0.066 | 0.054 | 0.054 | 0.058 | 0.058 | 0.017 | 0.017 | 0.012 | 0.012 | 0.008 | 0.008 | 0.012 | 0.012 | 0.004 | 0.004 | 0.004 | 0.004 |  |  |
| 37 | B. bavariensis, CP028872 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.067 | 0.067 | 0.063 | 0.063 | 0.071 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.063 | 0.063 | 0.058 | 0.058 | 0.063 | 0.063 | 0.021 | 0.021 | 0.017 | 0.017 | 0.013 | 0.013 | 0.017 | 0.017 | 0.000 | 0.000 | 0.008 | 0.008 | 0.004 |  |
| 38 | B. bavariensis, CP058812 | 0.079 | 0.083 | 0.071 | 0.071 | 0.071 | 0.071 | 0.067 | 0.067 | 0.063 | 0.063 | 0.071 | 0.071 | 0.071 | 0.071 | 0.058 | 0.058 | 0.063 | 0.063 | 0.063 | 0.058 | 0.058 | 0.063 | 0.063 | 0.021 | 0.021 | 0.017 | 0.017 | 0.013 | 0.013 | 0.017 | 0.017 | 0.000 | 0.000 | 0.008 | 0.008 | 0.004 | 0.000 |