**Table S1. Summary of tissue colonization promoted by diverse *dbpA* alleles**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Day 3 | Day 7 | Day 14 | Day 21 | Day 28 |
| Inoc. site | pDbpBA | 229±70† | 25763±5525† | 287±96 † | 317±61† | 350±30† |
|  | Vector | 5.4±1.1\* | 6.6±0.9\* | 2.1±0.7\* | 2.3±0.6\* | 6.2±1.3\* |
|  | pDbpAVS461ΔC11 | 3.6±1.0\* | NDa | NDa | NDa | 7.9±1.9\* |
|  | pDbpAVS461 | 31±8\*† | 5309±272\*† | 750±35 † | 978±164† | 317±79† |
|  | pDbpAPBr | 171±53† | 1868±631\*† | 356±63† | 67±14\*† | 33±7\* |
|  | pDbpAN40-D10/E9 | 18±4\*† | 3615±797\*† | 665±18† | 466±97† | 145±20† |
|  |  |  |  |  |  |  |
| Bladder | pDbpBA | NDa | 291±90† | 976±25† | 455±16† | 127±28† |
|  | Vector | NDa | 5.3±1.1\* | 4.8±1.5\* | 5.7±1.1\* | 11±2\* |
|  | pDbpAVS461ΔC11 | NDa | NDa | NDa | NDa | 8.3±2.6\* |
|  | pDbpAVS461 | NDa | 92±3.3† | 137±31\*† | 444±17† | 94±22† |
|  | pDbpAPBr | NDa | 39±6\*† | 97±5\*† | 242±50† | 49±6\*† |
|  | pDbpAN40-D10/E9 | NDa | 79±3\*† | 85±3\*† | 307±73† | 79±10† |
|  |  |  |  |  |  |  |
| Knee | pDbpBA | NDa | 852±30† | 147±20† | 116±40† | 107±33† |
|  | Vector | NDa | 5.5±1.9\* | 1.7±0.2\* | 4.3±1\* | 7.9±2.1\* |
|  | pDbpAVS461ΔC11 | NDa | NDa | NDa | NDa | NDa |
|  | pDbpAVS461 | NDa | 1575±447† | 498±23† | 88±12† | 16±3\* |
|  | pDbpAPBr | NDa | 854±13† | 362±87† | 49±10† | 18±4\* |
|  | pDbpAN40-D10/E9 | NDa | 1328±249† | 200±28† | 212±41† | 86±15† |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| Tibio tarsus | pDbpBA | NDa | 2373±341† | 442±71† | 113±47† | 521±12† |
|  | Vector | NDa | 5.7±1.6\* | 4.9±1.2\* | 2.9±0.7\* | 10±2\* |
|  | pDbpAVS461ΔC11 | NDa | NDa | NDa | NDa | NDa |
|  | pDbpAVS461 | NDa | 1597±405† | 189±59† | 46±15† | 38±11\* |
|  | pDbpAPBr | NDa | 2105±285† | 86±18† | 53±23† | 27±18\* |
|  | pDbpAN40-D10/E9 | NDa | 1620±332† | 244±52† | 81±19† | 202±54† |
|  |  |  |  |  |  |  |
| Heart | pDbpBA | NDa | 2.6±0.9 | 142±50† | 393±96† | 149±41† |
|  | Vector | NDa | 4.8±1.5 | 4.4±1.2\* | 6.8±1.7\* | 3.4±1.1\* |
|  | pDbpAVS461ΔC11 | NDa | NDa | NDa | NDa | NDa |
|  | pDbpAVS461 | NDa | 4.5±1.2 | 14±8\* | 291±11.6† | 19±9\* |
|  | pDbpAPBr | NDa | 3.9±1.3 | 27±10\* | 1699±552† | 348±96† |
|  | pDbpAN40-D10/E9 | NDa | 2.8±0.8 | 10±4\* | 36±8.0\*† | 6.7±3.1\* |
|  |  |  |  |  |  |  |
| Ear | pDbpBA | NDa | 2.1±0.5 | 46±2.6† | 145±21† | 323±91† |
|  | Vector | NDa | 3.2±0.8 | 6.2±1.3\* | 8.7±3.4\* | 7.3±1.5\* |
|  | pDbpAVS461ΔC11 | NDa | NDa | NDa | NDa | 9.7±3.1\* |
|  | pDbpAVS461 | NDa | 3.6±0.9 | 6.1±2.4\* | 12.8±5.3\* | 1575±671† |
|  | pDbpAPBr | NDa | 4.2±0.9 | 4.3±1.8\* | 7.7±2.4\* | 101±26† |
|  | pDbpAN40-D10/E9 | NDa | 6.9±1.0 | 6.2±3.2\* | 12±4\* | 293±61† |

Each data point represents the average number ± standard deviation of spirochetes present as determined by qPCR based on dates in Figs. 2, 3, 4, 5, and S5

a Not determined.

\*Statistical significance compared with ML23/Vector

† Statistical significance compared with Δ*dbpBA*/Vector