

**Table S1. Determination of ID<sub>50</sub><sup>a</sup>.**

Target Dose	A3-M9 lp36-minus	A3-M9 lp36-minus/ lp36-gent	A3-M9 lp36-minus/ pBSV2G <i>bbk17</i>	A3-M9 $\Delta$ <i>bbk17::flgB<sub>p</sub>-kan</i> / pBSV2G	A3-M9 $\Delta$ <i>bbk17::flgB<sub>p</sub>-kan</i> / pBSV2G <i>bbk17</i>
1x10 <sup>1</sup>	ND <sup>b</sup>	0/6	ND	ND	ND
1x10 <sup>2</sup>	ND	1/6	1/6	ND	0/6
1x10 <sup>3</sup>	ND	3/6	3/6	1/6	3/6
5x10 <sup>3</sup> <sup>c</sup>	1 <sup>d</sup> /15	14/15	15/15	1/15	13/15
1x10 <sup>4</sup>	0/6	2/2	4/6	5/6	6/6
1x10 <sup>5</sup>	1 <sup>d</sup> /6	2/2	6/6	6/6	6/6
1x10 <sup>6</sup>	0/6	2/2	6/6	6/6	ND
1x10 <sup>7</sup>	3 <sup>d</sup> /6	2/2	ND	6/6	ND
1x10 <sup>8</sup>	4 <sup>d</sup> /6	2/2	ND	ND	ND
ID <sub>50</sub> <sup>e</sup>	7.1x10 <sup>6</sup>	9.5x10 <sup>2</sup>	4.1 x10 <sup>2</sup>	8.5 x10 <sup>3</sup>	6.6 x10 <sup>2</sup>
95% CI <sup>f</sup>	1.1x10 <sup>6</sup> -5.8x10 <sup>7</sup>	1.5x10 <sup>2</sup> -5.0x10 <sup>3</sup>	5.5x10 <sup>1</sup> -2.1x10 <sup>3</sup>	1.8x10 <sup>3</sup> -4.6x10 <sup>4</sup>	9.3x10 <sup>1</sup> -3.3x10 <sup>3</sup>

<sup>a</sup>Number of mice infected assessed by reisolation of spirochetes from mouse ear, bladder and joint tissues 4 weeks post inoculation/number of mice analyzed. Spirochetes were reisolated from all three tissues unless otherwise noted.

<sup>b</sup>Not Determined.

<sup>c</sup>Includes infection data from a separate experiment in which mice were inoculated with a single target dose of 5x10<sup>3</sup>.

<sup>d</sup>Spirochetes were only reisolated from ear tissue.

<sup>e</sup>Estimated by probit regression on adjusted dose as described in the Experimental Procedures.

<sup>f</sup>95% Confidence Interval.

**Table S2. Primers and Taqman probes used in this study.**

Primer number	Designation	Sequence 5'-3'
1	lp36 F	CGTCAAATCTTCTGGGGTG
2	lp36 R	CCTATTTCAAGGGCGTGAG
3	<i>flaB<sub>p</sub></i> -BamHI	GGATCCTGTCTGTCGCCTCTTGTGGCTTCCGG
4	3' <i>aacC1</i> -NheI	GCTAGCCGATCTCGGCTTGAACG
5	<i>bbk17</i> -600 5'	ATGCAAAATGCGGGCATAGAATTCC
6	<i>bbk17</i> +500 3'	AAGGATGCTATTAAGCGGAGCCG
7	<i>bbk17</i> -12045-SalI 3'	ACGCGTCGACGGATTATTAATTGTGTGTCTGGCAG
8	<i>bbk17</i> -10242-SalI 5'	ACGCGTCGACCTTAAATTATAGCGCAAAGTGCCAG
9	<i>flgBP<sub>o</sub></i> XhoI	TAATACTCGAGCTTCAAGGAAGATT
10	<i>Kan</i> term- XhoI	ATCTCGAGCTAGCGCCGTCCCGTCAA
11	<i>bbk17</i> -KpnI 5'	CGGGGTACCCTTTGCGCTATAATTTAAGT
12	<i>bbk17</i> -BamHI 3'	CGCGGATCCAAAACTTTTGAGTTCCTTC
13	<i>flaB</i> FWD	TCTTTTCTCTGGTGAGGGAGCT
14	<i>flaB</i> REV	TCCTTCCTGTTGAACACCCTCT

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15	<i>nid</i> FWD	CACCCAGCTTCGGCTCAGTA
16	<i>nid</i> REV	TCCCCAGGCCATCGGT

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Probe number	Designation	Sequence 5'-3'
1	<i>flaB</i> Taqman probe	6-FAM-AAACTGCTCAGGCTGCACCGGTTT-TAMRA
2	<i>nid</i> Taqman probe	6-FAM-CGCCTTTCCTGGCTGACTTGGACA-TAMRA

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