

**Table S1.** Oligonucleotide primers used in this study

Sequence (5' → 3')	Purpose
GCTCAAATAAGAGGTTTGC	Forward primer for RT-PCR of <i>Borrelia burgdorferi flaB</i>
ATTCCAAGCTCTTCAGCTG	Reverse primer for RT-PCR of <i>B. burgdorferi flaB</i>
TTGCTGATCAAGCTCAATATAACCA	Forward primer for qPCR of <i>B. burgdorferi flaB</i>
TTGAGACCCCTGAAAAGTGATGC	Reverse primer for qPCR of <i>B. burgdorferi flaB</i>
CAGCTGAAGAGCTTGGAAATGCAGCCT	Probe primer for qPCR of <i>B. burgdorferi flaB</i>
AGCTGAAGAGCTTGGAAATGC	Forward primer for qPCR of <i>B. burgdorferi flaB</i> in human samples
TTGGTTTCTCCAACATGAA	Reverse primer for qPCR of <i>B. burgdorferi flaB</i> in human samples
AGAGGGAAATCGTGCCTGAC	Forward primer for qPCR of mouse $\alpha$ -actin
CAATAGTGATGACCTGGCCGT	Reverse primer for qPCR of mouse $\alpha$ -actin
CACTGCCGCATCCTCTTCCTCC	Probe primer for qPCR of mouse $\alpha$ -actin
CAAAGGTTGCCGGCTCTTC	Forward primer for RT-PCR of <i>B. burgdorferi bmpA</i>
CTTCTACCAAGCTTCAAGGTCAG	Reverse primer for RT-PCR of <i>B. burgdorferi bmpA</i>
ATCTACTCAGTATATTGGTAGTTGC	Forward primer for qPCR of <i>B. burgdorferi bmpA</i>
CATGATGAATAATGTCTATCTCATCAG	Reverse primer for qPCR of <i>B. burgdorferi bmpA</i>
CCTTGAAGCTGGTAGAAGCGTTGCAACTAG	Probe primer for qPCR of <i>B. burgdorferi bmpA</i>
TGGTGATGATGTTGAGATTCC	Forward primer for RT-PCR of <i>Borrelia burgdorferi bmpB</i>
TTTGCTGCCTCAATAAACACC	Reverse primer for RT-PCR of <i>Borrelia burgdorferi bmpB</i>
agatttccagaaaattattgaagaagt	Forward primer for qPCR of <i>B. burgdorferi bmpB</i>
cgatgaaaccaataaagatgcg	Reverse primer for qPCR of <i>B. burgdorferi bmpB</i>
GCTATTTCTGGAGTTTATTCTAGTTATGTTTCAGATCTTGA	Probe primer for qPCR of <i>B. burgdorferi bmpB</i>
GCGTTCATGATGGTGTGTAA	Forward primer for qPCR of <i>B. burgdorferi bmpC</i>
ATCCTCAGTCATTGCCTCATC	Reverse primer for qPCR of <i>B. burgdorferi bmpC</i>
AAGACCTTATCCTATTGAGGGTAAAAGACTTCTTAC	Probe primer for qPCR of <i>B. burgdorferi bmpC</i>
TGGAGGAGTGAGGGGAAAA	Forward primer for qPCR of <i>B. burgdorferi bmpD</i>
GCCGTTGAACGACCAAGT	Reverse primer for qPCR of <i>B. burgdorferi bmpD</i>
AGTGGTCTCTCAATACGTTGGTACA	Probe primer for qPCR of <i>B. burgdorferi bmpD</i>
TTGGAGAC	
GTGGGCATGACCTTAGAGC	Forward primer for qPCR of <i>B. burgdorferi bb0381</i>
GCAACGCTTCTACCAAGCTTC	Reverse primer for qPCR of <i>B. burgdorferi bb0381</i>
ACGAAATTCCTGGGAGCGAAATTCCTAA	Forward primer for recombinant BmpA production. A <i>EcoRI</i> site (italicized) is attached for the purpose of cloning
agctcgagttaataaaattctttaagaaa	Reverse primer for recombinant BmpA production. A <i>XhoI</i> site (italicized) is attached for the purpose of cloning
TTGAAATCGAATCTAGTTCAAAAAAATT	Forward primer for recombinant BmpB production. A <i>EcoRI</i> site (italicized) is attached for the purpose of cloning
GTCTCGAGTTATAACTTTAATATTGTTT	Reverse primer for recombinant BmpB production. A <i>XhoI</i> site (italicized) is attached for the purpose of cloning
AAATAGAAATAGGATAGTACGCATCTACTCTTGGGGAGT	Primer P1, PCR of the left arm for constructing the <i>bmpA/B</i> <sup>-</sup> mutant (5' primer). An <i>XbaI</i> site (italicized) is attached for the purpose of cloning.
TTGAGCTCAGAAGTGCTTTATATGAGAATTGT	Primer P2, PCR of the left arm for constructing the <i>bmpA/B</i> <sup>-</sup> mutant (3' primer). A <i>SacI</i> site (italicized) is attached for the purpose of cloning.
AACTCGAGCCTTAGGAATTCGCTCCCAAG	Primer P3, PCR of the right arm for the constructing <i>bmpA/B</i> <sup>-</sup> mutant (5' primer). An <i>XhoI</i> site (italicized) is attached for the purpose of cloning.
TTGGTACCAATTGGGCAAAGTATAATGAATGGT	Primer P4, PCR of the right arm for constructing the <i>bmpA/B</i> <sup>-</sup> mutant (3' primer). A <i>KpnI</i> site (italicized) is attached for the purpose of cloning.
ATGGATTCCAATAGGTTGGTTGATGAA	Forward primer for constructing the <i>bmpAB</i> complemented isolate. A <i>BamHI</i> site (italicized) is attached for the purpose of cloning into pKFSS1.
CGGTCGACTTATAACTTTAATATTGTTTTAT	Reverse primer for constructing the <i>bmpAB</i> complemented isolate. A <i>Sall</i> site (italicized) is attached for the purpose of cloning into pKFSS1.
AGTGGTCTCTCAATACGTTGGTACA	Probe primer for qPCR of <i>B. burgdorferi bmpD</i>
TTGGAGAC	