Study of the response regulator Rrp1 reveals its regulatory role on chitobiose utilization and virulence of *Borrelia burgdorferi*

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Running title: Regulation of chitobiose utilization in *Borrelia burgdorferi*

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Table S1. Oligonucleotide primers used in this study.

Primer	Description	Sequences
P_1	mutagenesis of *bb0419* (F)	5'-GAAGCAGAGAATCAGAAGC-3'
P_2	mutagenesis of *bb0419* (R)	5'-CCTTTAACACTTGGCCTTC-3'
P_3	Kan (F)	5'-TCTAGAATAATACCCGAGCTTCAAG-3'
P_4	Kan (R)	5'-TGGCCATTAGAAAAACTCATCGAGC-3'
P_5	complementation, upstream of *bb0420* (F)	5'-GGATCCTTGTAAAAACCCTGGTGG-3'
P_6	complementation, upstream of *bb0420* (R)	5'-CTTTAATTATCATTTCCACGTTATTTT AAAATTCCCT-3'
P_7	complementation, *bb0419* (F)	5'-AGGGAATTTTAAAATAACGTGGAAAT GATAATTAAAG-3'
P_8	complementation, *bb0419* (R)	5'-GGATCCTTAATATCTAAACTGATTTC-3'
P_9	pCisCom 5' arm (F)	5'-ATGGGTGTTTTAGATAAGATTAAAC-3'
P_{10}	pCisCom 5' arm (R)	5'-CCATGG TCTAGATTAATTTCTATTA ATATTATTAAG-3'
P_{11}	pCisCom 3' arm (F)	5'- CCATGGTTAATTGTCACCATCAAC-3'
P_{12}	pCisCom 3' arm (R)	5'- ATGTTTAAAGTTATCAAATG-3'
P_{13}	*aacC1* (F)	5'-TCTAGA GGATCC CTGCAGTAATAC CCGAGCTTCAAG-3'
P_{14}	*aacC1* (R)	5'-GAATTC CCATGGTTAGGTGGCGGT ACTTGGGTC-3'
P_{15}	*chbC* rescue in *rrp1*^{mut}, *flgBp* (F)	5'-GCATGCTACCCGAGCTTCAAGGAAG-3'

P_{16}	*chbC* rescue in *rrp1*^{mut}, *flgBp* (R)	5'-CATATGATGGAAACCTCCCTCATTTA-3'
P_{17}	*chbC* rescue in *rrp1*^{mut}, *chbC* (F)	5'-CATATGATGAATTTTCAAGATTTTATT GAAACTAC-3'
P_{18}	*chbC* rescue in *rrp1*^{mut}, *chbC* (R)	5'-GCATGCCTATTCTTTTTCCTGCAAAAG-3'
P_{19}	qRT-PCR, *rpoS* (F)	5'-ACCTATCTCCTGCTCAGTATATAA-3'
P_{20}	qRT-PCR, *rpoS* (R)	5'-CAAGGGTAATTTCAGGGTTAAAAG-3'
P_{21}	qRT-PCR, *bbb04* (F)	5'-GCTGGACAATCAGATTGGATAC-3'
P_{22}	qRT-PCR, *bbb04* (R)	5'-TCCTAAAGAACTTTGAATAGCA-3'
P_{23}	qRT-PCR, *bosR* (F)	5'-CCTGTATTATTGAAAAATTTAACAT CAG-3'
P_{24}	qRT-PCR, *bosR* (R)	5'-GACTTGATTGCATTTATTGCAT-3'
P_{25}	qRT-PCR, *flaB* (F)	5'-CCCTGAAAGTGATGCTGGTGTG-3'
P_{26}	qRT-PCR, *flaB* (R)	5'-CATATTCAGATGCAGACAGAGG-3'

The underlined sequences are the engineered restriction cut sites for DNA cloning.

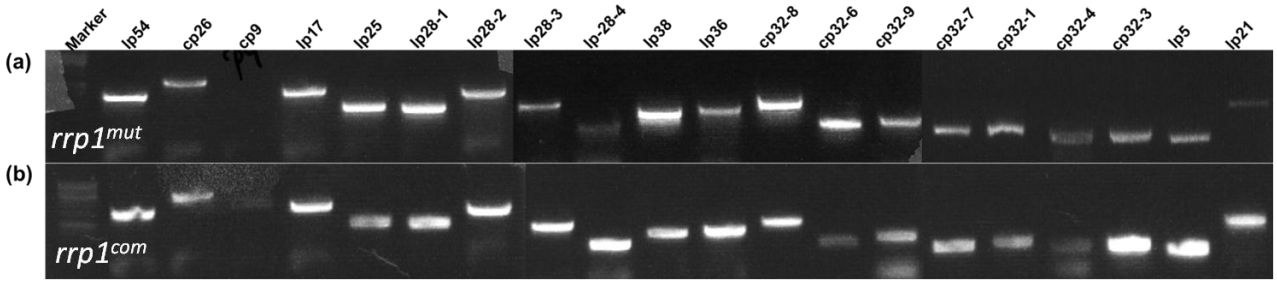

Fig.S1. Detection of plasmid contents in *rrp1*^{mut} (a) and *rrp1*^{com} (b) strains by PCR. The primers for PCR were described as before (1). The parental strain A3-68 lacks lp56 (2).

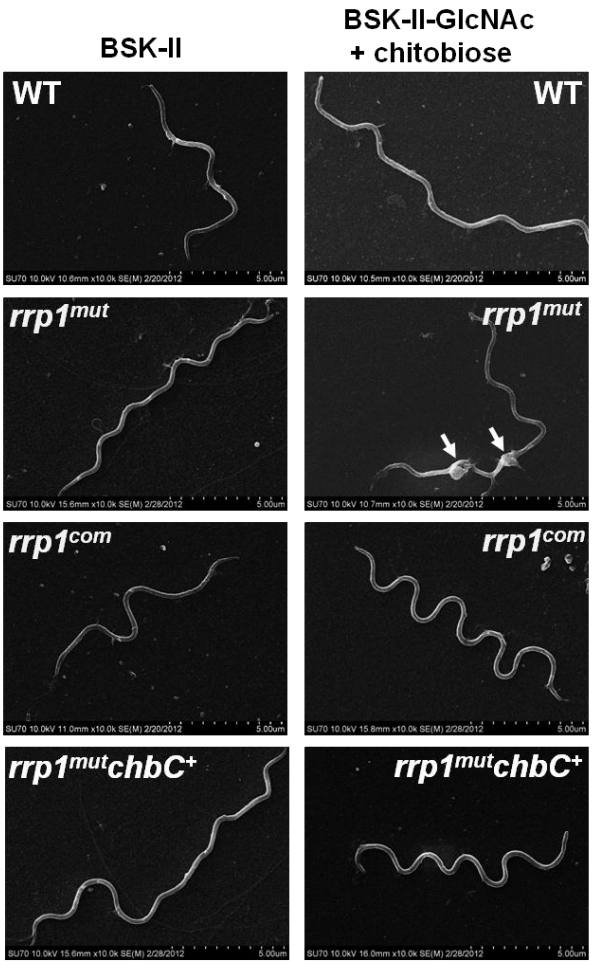

Fig.S2. Scanning electron microscope analysis. The wild type (WT), *rrp1*^{mut}, *rrp1*^{com}, and *rrp1*^{mut}*chbC*$^{+}$ strains were cultured in both normal BSK-II medium (left panel) and BSK-II – GlcNAc + chitobiose medium (right panel). Stationary phase cells (Day 8) were subjected to scanning electron microscope analysis. Arrows point to membrane blebs.

Reference List

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