Supplementary Figure 1. Ftl immunoblot analyses of Lyme disease isolates from Europe. Cell lysates of LD isolates from Europe (as labeled along the top) were fractionated by SDS-PAGE and the proteins stained with CBB (top panel) or transferred to PVDF membranes by immunoblotting. Identical immunoblots were screened with the anti-serum indicated to the left. All hyperimmune sera were used at a 1:1000 dilution. The migration positions of the MW standards are indicated in kDa. All immunoblots were imaged together for the same amount of time.
Supplementary Figure 1.
Supplementary Figure 2. Immunoblot screening for two different antigens (FtIA and BBK19) that are encoded by the same linear plasmid. B. burgdorferi cell lysates were fractionated by SDS-PAGE and the proteins stained with CBB (top panel) or transferred to PVDF membranes by immunoblotting. Identical immunoblots were screened with antiserum generated against two different proteins (FtIA and BBK19) that are encoded by genes carried by the same linear plasmid (B. burgdorferi B31; plasmid K; lp38) as indicated. The hyperimmune sera were used at a 1:1000 dilution. The migration positions of the MW standards are indicated in kDa. The immunoblots were imaged simultaneously.
Supplementary Figure 2.
### Supplementary Table 1.

| Species/Isolate | Origin |
|-----------------|--------|
| B. *burgdorferi* B31 | I. *scapularis*; NY, USA; clonal |
| B. *burgdorferi* 272 | Human skin; NY, USA |
| B. *burgdorferi* 297 | Human CSF; CT, USA; clonal |
| B. *burgdorferi* 21721 | I. *scapularis*; WI, USA |
| B. *burgdorferi* 3028 | Human skin; TX, USA |
| B. *burgdorferi* c77633 | Mouse tissue; NY, USA; clonal |
| B. *burgdorferi* HB19 | Human blood; CA, USA |
| B. *burgdorferi* CA2 | I. *neotomae*; CA, USA |
| B. *burgdorferi* JD1 | I. *scapularis*; NY, USA |
| B. *burgdorferi* LP5 | Human skin; CT, USA |
| B. *burgdorferi* DCA16c | Skin biopsy isolate from a laboratory dog infected using field collected *I. pacificus* ticks from CA, USA; clonal |
| B. *burgdorferi* DRI103a, DRI140h, DRI185d, DRI185e | Skin biopsy isolates from laboratory dogs infected using field collected *I. scapularis* ticks from RI, USA; clonal |
| B. *burgdorferi* DWI11a | Skin biopsy isolate from a laboratory dog infected using field collected *I. scapularis* ticks from WI, USA; clonal |
| B. *burgdorferi* LDP7, LDP56, LDP60, LDP61, LDP63, LDP65, LDP73, LDP74, LDP116 | Human blood isolates: MD, USA |
| B. *burgdorferi* VS134 | I. *ricinus*; Switzerland |
| B. *burgdorferi* IP2a | Human CSF; France; clonal |
| B. *afzelii* UM01 | Human skin; Sweden; clonal |
| B. *afzelii* Pko | Human skin; Germany; clonal |
| B. *afzelii* J1 | I. *persulcatus*; Japan; clonal |
| B. *garinii* 20047 | I. *ricinus*; France |
| B. *garinii* FRG | I. *ricinus*; Germany |
| B. *garinii* Jem5 | Human skin; Japan |
| B. *bavariensis* PHoe, PFIn, PBi | Human CSF; Germany |

*Clonal populations were obtained by sub-surface plating.*