

Borrelia miyamotoi HT31株の染色体地図と
ダニ媒介性回帰熱の起因菌である
Borrelia turicatae との比較

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**Physical Mapping of the *Borrelia miyamotoi* HT31 Chromosome in
Comparison with That of *Borrelia turicatae*, an Etiological Agent
of Tick-Borne Relapsing Fever**

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ABSTRACT We report the construction of physical maps of chromosomes for *Borrelia miyamotoi* HT31 (new species of *Borrelia*) and *Borrelia turicatae* (relapsing fever agent) by pulsed field gel electrophoresis of DNA fragments generated by digestion of chromosomal DNA with rare-cutting restriction endonucleases and reciprocal hybridization. The size of the *B. miyamotoi* HT31 chromosome was calculated to be approximately 925 kilobase pairs and the chromosome for *B. turicatae* was estimated to be 951 kilobase pairs. The chromosomes of *B. miyamotoi* HT31 and *B. turicatae* consisted of single linear molecules. The locations of several genes have been assigned to the chromosome maps by Southern hybridization using specific gene probes. Comparison of the genetic maps of the two species of *Borrelia* provided evidence that the gene order on the chromosomes is quite similar to that of *Borrelia burgdorferi* sensu lato strains and is highly conserved in the genus *Borrelia*.

抄録 新種ボレリア *Borrelia miyamotoi* (HT31株) と回帰熱ボレリア *Borrelia turicatae* の染色体を解析し、物理地図および遺伝子地図を作成した。その結果、*B. miyamotoi* と *B. turicatae* の染色体はそれぞれ 925 kb, 951 kb の直鎖状の分子であることが明らかになった。また、この2種のボレリア染色体の遺伝子の位置と既に報告

されているライム病ボレリアの遺伝子地図との比較から、ボレリア属細菌の染色体遺伝子構成は高度に保存されていることが示された。