

# *Borrelia hermsii* と *Borrelia miyamotoi* の 主要抗原蛋白遺伝子の相同性解析

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## Homology of Variable Major Protein Genes between *Borrelia* *hermsii* and *Borrelia miyamotoi*

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**ABSTRACT** Antigenic variation has been studied in detail for the etiological agent of relapsing fever, *Borrelia hermsii*. The variable major proteins (vmps) are found at its cell surface, enabling it to avoid the host's immune response. We have cloned and sequenced the vmp-gene (vmp)-like sequences from the *Borrelia miyamotoi* strains HT31 and FR64b and the deduced amino acid sequences were compared with the published vmp proteins vmp3, vmp24, and vmp33 of *B. hermsii*. The sequences were aligned and revealed pairwise sequence identities ranging from 45 to 51%, and differences were scattered throughout the sequences. Southern hybridization using the cloned vmp-like sequence of strain HT31 as a probe suggested that the vmp homologues reside on the linear plasmids of *B. miyamotoi*. The probe hybridized weakly with *B. hermsii* linear plasmids and restriction digests. These results suggest that *B. miyamotoi* has sequences resembling the vmp genes in *B. hermsii*.

抄録 回帰熱ボレリアの主要抗原蛋白 (vmps) は宿主の免疫応答を回避するための抗原変異の主体をなすものである。そこで、回帰熱ボレリア様の性状を有する新種ボレリア *Borrelia miyamotoi* の抗原変異システムを検討するため vmp 様遺伝子の解析を行った。その結果、*B. miyamotoi* は *Borrelia hermsii* の vmp に類似した遺伝子を複数有しており、その遺伝子は直鎖状のプラスミド上に位置していることが明らかになった。