

ライム病ボレリア *Borrelia garinii* の菌体表層蛋白 OspA/B 遺伝子解析による地域多様性

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Genetic diversity and the absence of regional differences of *Borrelia garinii* as demonstrated by *ospA* and *ospB* gene sequence analysis

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ABSTRACT Unfed adult *Ixodes persulcatus* ticks were collected from four locations of Nagano and Hokkaido in Japan. Infected *Borrelia garinii* were investigated by PCR-RFLP of the *ospA* and *ospB* gene sequences. The representatives in each PCR-RFLP group and individuals from the borrelial strains were sequenced, and their deduced amino acid sequences were aligned. A neighbor-joining phylogenetic analysis showed that the *B. garinii* OspA or OspB sequences were each divided into three major clusters including isolates from both the Nagano and Hokkaido locations. There was no local difference in OspA/B sequences between Nagano and Hokkaido. The *osp* gene of *Borrelia burgdorferi* sensu lato is highly heterogeneous, and this was also confirmed by our sequence analysis. Some strains of the different PCR-RFLP groups had closely related OspA sequences, while the OspB sequences of these strains were quite different. These findings suggested intraspecies gene exchange and recombination events between the two genes in *B. garinii*.

抄録 北海道と長野の隔離された2地点において分離されたシュルツエマダニ由来 *Borrelia garinii* について、菌体表層蛋白 *ospA* および *ospB* 遺伝子を基にした PCR-RFLP による分類を行った。近接結合法による系統樹解析結果から、北海道および長野の両地点における *B. garinii* の *ospA*、および *ospB* はそれぞれ独立したクラスターに分類された。しかしながら、両地点での地域多様性は認められなかった。

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