

回帰熱ボレリア *Borrelia duttonii* の直鎖状 プラスミドのサイズ変換

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Microbiol. Immunol., 44(12): 1071-1074 (2000)

Size conversion of a linear plasmid in the relapsing fever agent *Borrelia duttonii*

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ABSTRACT : *Borreliae* have genomes composed of both linear and circular replicons. We have characterized the organization of linear DNA molecules from the *Borrelia duttonii* strain Ly. It contains a linear one megabase chromosome and 12 linear plasmids of 11 to 200 kb in size. A variant of the strain obtained after successive in vitro cultivation in BSKII medium had a 69 kb molecule instead of the 44 kb linear plasmid. No detectable differences in the growth rates and cellular structures were found. Southern hybridization using the *vsp33* gene sequence from *Borrelia hermsii* as a probe showed that both plasmids (69 and 44 kb molecules) contained a similar part of the sequence. The spirochetes of the parental strain cause erythrocytes to aggregate in mice blood, but the variant did not form such aggregates and seemed to have lost its infectivity in mice. Size conversion of the linear plasmid may be associated with the host-parasite relationship in mammals.

抄録 *Borrelia duttonii* Ly 株は、1mbの直鎖状染色体と11~200kbの直鎖状プラスミドを保有する。この株は継代培養により44kbのプラスミドが69kbにサイズ転換し、同時にマウスへの感染性が失われた。プラスミドのサイズ転換がボレリアの感染性に関与していることが示唆された。

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