

病原性レプトスピラ Ictero No.1 株の繰り返し配列 を用いたレプトスピラ症の診断

高橋幸江、岸田雅美、山本覚、福長将仁

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Repetitive sequence of *Leptospira interrogans* serovar *icterohaemorrhagiae* strain Ictero No.1: a sensitive probe for demonstration of *Leptospira interrogans* strains.

Yukie Takahashi, Masami Kishida, Satoru Yamamoto and
Masahito Fukunaga

ABSTRACT A 4.8-kilobase (kb) repetitive sequence element generated with *Kpn*I digestion was cloned from the *Leptospira interrogans* serovar *icterohaemorrhagiae* strain Ictero No. 1. The sequence, repeated in tandem, was located on the 280-kb fragment between the *Fse*I and *Asc*I sites on the chromosome by hybridization using the 4.8-kb fragment as a probe. We cloned the fragment containing the element for the Ictero No. 1 strain in a lambda EMBL3 bacteriophage DNA, and one out of 5 clones was sequenced. Within the sequenced 9-kb segment that partially repeated, 9 putative open-reading frames and 2 transfer RNA genes, for alanine and isoleucine, were identified. A similarity search for the products deduced from the sequenced data revealed that the repeated sequence includes both beta-oxidation enzymes, acyl-CoA dehydrogenase and enoyl-CoA hydratase, and hydroxythiazole kinase protein homologues. Hybridization experiments against different leptospiral strains using the element as a probe showed a similar sequence in the strains of *L. interrogans* and *L. kirschneri*, but not in any strains of *L. borgpetersenii*, *L. weillii*, *L. meyeri* or *L. biflexa*. Results indicated that the highly repeated element in the Ictero No. 1 strain exists as a well conserved sequence, though at a moderate level of repetition, in certain strains of *L. interrogans* and *L. kirschneri*. PCR amplification targeting the repetitive element was successful and indicated that the procedure provides a sensitive and specific probe

to detect leptospires.

抄録 病原性レプトスピラ *Leptospira interrogans* Ictero No.1株のゲノムDNAを制限酵素 *KpnI* で切断した際に生じる4.8kbの繰り返し配列をクローニングしシーケンスを行った。その断片は病原性レプトスピラに特徴的であり、この領域をターゲットとしたPCRは、レプトスピラ症の診断に有用であることを報告した。