

中国北西部のダニと齧歯類保有ライム病ボレリア

高田伸弘*¹、増澤俊幸*²、石畝史*³、藤田博己*⁴、久手堅みどり*²、
三谷春美、福長将仁、土屋公幸*⁵、矢野泰弘*¹、Ma Xiao-Hang*⁶

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Lyme disease *Borrelia* spp. in ticks and rodents from northwestern China

N. Takada*¹, T. Masuzawa*², F. Ishiguro*³, H. Fujita*⁴, M. Kudaken*²,
H. Mitani, M. Fukunaga, K. Tsuchiya*⁵, Y. Yano*¹, X. H. Ma*⁶

ABSTRACT: In May 1999, field surveys of Lyme disease spirochetes were conducted around the Tianshan Mountains in Xinjiang Uygur Autonomous Region in northwestern People's Republic of China. *Ixodes persulcatus* ticks were obtained in a Tianchi Lake valley with primary forest, while the tick fauna was poor in the semidesert or at higher altitudes in this region. Species identities were confirmed by molecular analysis in which an internal transcribed spacer sequence was used. Of 55 adult ticks, 22 (40%) were positive for spirochetes as determined by Barbour-Stoenner-Kelly culture passages. In addition, some rodents, including *Apodemus uralensis* (5 of 14 animals) and *Cricetulus longicaudatus* (the only animal examined), and some immature stages of *I. persulcatus* (4 of 11 ticks) that had fed on *A. uralensis* were positive for spirochetes. Based on 5S-23S rRNA intergenic spacer restriction fragment length polymorphism analysis and reactivity with monoclonal antibodies, 35 cultures (including double isolation cultures) were identified as *Borrelia garinii* (20 isolates, including 9 Eurasian pattern B isolates and 11 Asian pattern C isolates), *Borrelia afzelii* (10 pattern D isolates), and mixed cultures (5 cultures, including isolates that produced *B. garinii* patterns B and C plus *B. afzelii* pattern D). These findings revealed that Lyme disease pathogens are distributed in the mountainous areas in northwestern China even though it is an arid region, and they also confirmed the specific relationship between *I. persulcatus* and genetic patterns of *Borrelia* spp. on the Asian continent.

抄録 中華人民共和国北西部で1999年5月、ライム病スピロヘータのフィールド調査を行った。シュルツェマダニが天池湖で得られたが、砂漠化と高高所におけるダニ相は貧弱であった。種の同定はITS領域を用いた分子生物学的解析によった。成ダニ55匹中40%の22匹がBSK培地で培養可能なスピロヘータを保有していた。加えてアカネズミなどの齧歯類やアカネズミ付着していた幼若段階のシュルツェマダニの中にスピロヘータを保

有しているものもあった。リボソームRNA遺伝子間スペーサー領域のRFLP解析とモノクローナル抗体の反応性により、最優先種は、*Borrelia garinii*で *Borrelia afzelii*がそれに次いだ。また両種の混合も見られた。この調査で、ライム病病原体が乾燥した中国北西部の山岳地帯に分布していることが明らかになった。

*¹ Department of Immunology and Medical Zoology, Fukui Medical University
福井医科大学免疫学・医動物学講座

*² Department of Microbiology, School of Pharmaceutical Sciences, University of Shizuoka

静岡県立大学薬学部微生物学講座

*³ Fukui Prefectural Institute of Public Health

福井衛生環境研究センター

*⁴ Research Laboratory of Ohara General Hospital

大原総合病院附属大原研究所

*⁵ Experimental Animal Center, Miyazaki Medical College

宮崎医科大学附属実験動物施設

*⁶ Department of Microbiology, Faculty of Life Science, Zhejiang University

浙江大学生命科学学部微生物学講座