



应用多重PCR法分析西藏察隅疟疾流行区按蚊吸血习性

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Investigation on Blood-sucking Habit of *Anopheles* (Diptera: Culicidae) Using Multiplex Polymerase Chain Reaction in Malaria-Endemic Area of Chayu County, Tibet

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摘要

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摘要 目的 用多重PCR法分析西藏疟疾流行区察隅县常见按蚊的吸血习性, 为下一步研究传疟媒介提供参考。方法 2011年7~8月选择察隅县不同生态环境的3个自然村(日玛村、塔玛村和京都村), 每个村在人房和畜舍选择8个点, 采用诱蚊灯全通宵(20:00至次日08:00)诱捕法捕捉按蚊, 次日清晨收集诱捕的蚊虫, 经形态学鉴定蚊种, 分析按蚊组成。收集饱血按蚊, 分别提取单只蚊胃血的DNA, 采用基于不同动物mtDNA²cytb序列差异的多重PCR法鉴定各蚊胃血源, 计算人血指数, 分析按蚊的吸血习性。结果 共捕获按蚊1 442只, 经形态学鉴定, 多斑按蚊种团占99.6% (1 436/1 442), 带足按蚊和腹簇按蚊占0.4% (6/1 442)。多斑按蚊种团中, 伪威氏按蚊占85.5% (1 228/1 436), 威氏按蚊占14.5% (208/1 436)。用多重PCR检测202只多斑按蚊种团(伪威氏按蚊188只和威氏按蚊14只)的饱血蚊胃血, 结果显示, 伪威氏按蚊兼吸牛/猪血和人血, 人血指数为0.35, 威氏按蚊吸食猪血和人血, 人血指数为0.29。结论 西藏察隅县2种常见按蚊(伪威氏按蚊和威氏按蚊)均兼吸人畜血, 伪威氏按蚊的人血指数较高。

关键词: 西藏察隅县 疟疾 按蚊 多重PCR 人血指数

Abstract: Objective To determine the blood-sucking habit of anopheline by mosquitoes bloodmeal identification in malaria endemic area Chayu County, Tibet Autonomous Region. Methods Three villages with different bio-environments were selected as the investigation spots. Light traps were set up outdoor and in livestock sheds from sunset (20:00) to sunrise (8:00) in 3-4 consecutive nights to collect mosquitoes. The trapped anophelines were counted and identified according to morphological criteria and multiple PCR method. A PCR-based methodology according to the mtDNA-cytb variations was used in different mammal hosts to identify bloodmeal sources in engorged mosquitoes. The human blood index (HBI) was assessed to determine the range of hosts. Results Among 1 442 anopheline mosquitoes collected by 108 lighttraps on 13 nights. 1 436 (99.6%) belonged to *Anopheles maculatus* complex, with 85.5% *An. pseudowillmori* and 14.5% *An. willmori*. Positive bloodmeal identification was found from 168 (83%) of 202 field-collected engorged mosquitoes. The crude HBI of *An. pseudowillmori* and *An. willmori* were 0.35 and 0.29, respectively. Conclusion *An. pseudowillmori* and *An. willmori* are both zoophilic and anthropophilic, and *An. pseudowillmori* shows a higher HBI.

Keywords: Tibet Chayu county *Anopheles* Multi-PCR Human blood index

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