台灣牛結核病分子流行病學分析

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摘要

牛結核病(bovine tuberculosis, bTB)是 *Mycobacterium bovis* (*M. bovis*)感染所造成的重要人畜共通傳染病，牛為主要宿主，但可感染多數哺乳動物。感染後依感染途徑會於頭胸部淋巴結或腹腔臟器產生特徵性結節病灶。皮內結核菌素試驗(Intradermal tuberculin test, ITT)是國際間貿易用的標準牛結核病檢驗方法，也我國標準檢測方法，其他檢測方法還包括病原分離及 ELISA 等。在台灣，分離確診之陽性場數自 2012 至 2016 年間逐年降低，直至 2017 年陽性案例增加。本實驗室針對 2012-2017 年 *M. bovis* 分離株以結核菌群常用之兩種基因分型方法 Spoligotyping 及 MIRU/VNTR (ETR-A、ETR-B 及 Qub11b 三個位置)分析，共得 9 個型別，並發現每一年都有型別的消失及新/再出現。

Molecular epidemiological analysis of bovine tuberculosis in Taiwan

Chen-Shen Huang

Abstract

Bovine tuberculosis (bTB) is an important zoonotic disease caused by *Mycobacterium bovis*. Although, cattle are considered to be the main hosts of *M. bovis*, most mammals can be infected. Dependent on the route of infection, characteristic nodular lesions can occur in the head, chest lymph nodes, or abdominal organs. The intradermal tuberculin test (ITT) is the standard method for testing bovine tuberculosis, in particular, for the purposes of international trade. It is also the standard method for bovine tuberculosis detection in Taiwan. Other diagnostic methods include pathogen isolation and ELISA. In Taiwan, the number of culture-positive herds did not increase from 2012 to 2016, whereas the number of positive cases increased in 2017. Our laboratory uses two genotyping methods, Spoligotyping and mycobacterial interspersed repetitive units-variable numbers of tandem repeats typing (MIRU-VNTR using the loci sets ETR-A, ETR-B and Qub11b) which are common methods for typing *M. tuberculosis* complex. We thus used these two methods to analyze the *M. bovis* isolates obtained from 2012 to 2017, and 9 types were identified. We found that every year there is a type disappearing, appearing, or reappearing intermittently.