Identification and Differentiation of Mycobacterium Avium Subspecies Paratuberculosis Isolates Using and pAM-3 as a DNA Probe

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Abstract

Background: *Mycobacteriu avium subsp.paratuberculosis* (MAP) is the causative agent of Johne's disease. It is a very slow growing bacterium on synthetic medium. The use of conventional methods for diagnosis is time consuming and not accurate.

Objectives: The use of molecular biological techniques for fast and accurate diagnosis of *Mycobacterium avium subsp.paratuberculosis* isolates.

Materials and methods: DNA was extracted and prepared from four *Mycobacterium avium subsp.paratuberculosis* and four *Mycobacterium tuberculosis bovis* isolates. The extracted DNA was subjected to PCR by using specific primers and the isolates were distinguished and differentiated by hybridization technique using pAM-3 specific probe developed in New Zealand.

Results: The PCR products gave the requested DNA fragment of 163 base pairs. The probe reacted specifically with targeted DNA fragment of paratubreculosis bacterial isolates but not with tuberculosis bovis isolates.

Conclusion: The use of PCR and specific DNA probe for the diagnosis of MAP is a fast and accurate method for diagnosis of MAP.

Keywords: Mycobacterium, Paratuberculosis, Johne's disease.

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