

# COMPARATIVE IS1245 RFLP-BASED STUDY OF MYCOBACTERIUM AVIUM SUBSP. HOMINISSUIS INFECTION IN PIGS AND HUMANS

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*M. avium* subsp. *hominissuis*, ubiquitous environmental mycobacterium, is an opportunistic pathogen that is in our country frequently isolated from pigs and occasionally from humans. The aim of our study was to assess the genetic diversity of swine and human *M. a. hominissuis* isolates collected in the period from 1998 to 2005. Genetic relatedness of 114 isolates from pigs (n=57) and humans (n=57), identified by means of bacteriology, DNA-RNA hybridization techniques and IS1245 PCR, was investigated using IS1245-PvuII RFLP. The results were subjected to computer-assisted analysis with BioNumerics software (Applied Maths).

Identical IS1245 RFLP profiles were found among the isolates from animals originating from different farms and from the same farm. Polyclonal infections were also detected. Identical profiles were discovered also among some human isolates, in one case with no obvious epidemiological link between the patients while in the other case the patients shared the hospital room. In addition, two isolates from pigs and one isolate from humans shared the same profile. The proportion of clustered isolates varied as it depended on the similarity level (100% and 75%) chosen for the definition of clusters. Using IS1245 RFLP, it was possible to detect monoclonal and polyclonal infections and to differentiate between re-infection and reactivation of the disease.

Our findings support the hypothesis that the sources of the infection are in the environment and that the disease is not transmitted between the animals. We describe a case of possible transmission of infection between the patients while the question whether the humans can get the infection from animals remains to be answered.