Epidemiological Analysis of Erysipelothrix Isolates from Various Animals by Acriflavine Resistance and RAPD Typing

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Abstract:

The epidemiological analysis of Erysipelothrix isolates recovered from pigs, cattle and chickens was studied by the analysis of acriflavine resistance and the PCR-based DNA fingerprinting method using random amplified polymorphic DNA (RAPD). Thirty-two Erysipelothrix field isolates, 7 Erysipelothrix reference strains and 13 random primers were tested. Among the tested primers, the primers NK6 (CCCGCGCCCC) and D9355 (CCGGATCCGTGATGCGGTGC) produced noticeable results. The primer NK6 revealed 5 RAPD patterns (a/e) while primer D9355 revealed 8 RAPD patterns (A/H) that were not serovar specific. Namely, different patterns were produced among strains of the same serovar showing that the RAPD method is able to identify the genetic variations of Erysipelothrix species but the RAPD data demonstrated that the some serovar 1a E. rhusiopathiae strains including strain Koganei 65-0.15 for the production of live vaccine were closely related each other genetically, irrespective of their acriflavine resistance. Based on these results, we concluded that the RAPD method with primer D9355 is a rapid and reliable method to differentiate Erysipelothrix isolates from various animals; and might be a useful tool for the epidemiological analysis of the Erysipelothrix species.

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