

SUMMARY OF THESIS*

BARROS, Maria Paloma Silva de - **Padronização e avaliação da técnica de eletroforese em gel de campo pulsado (PFGE) para tipagem molecular das cepas de *Yersinia pestis* isoladas no nordeste brasileiro.** Recife, 2007. (Dissertação de Mestrado - Centro de Pesquisas Aggeu Magalhães da Fundação Oswaldo Cruz).

STANDARDIZATION AND EVALUATION OF PULSED-FIELD GEL ELECTROPHORESIS (PFGE) TECHNIQUE FOR MOLECULAR TYPING OF *Yersinia pestis* STRAINS ISOLATED IN THE NORTHEAST OF BRAZIL

Yersinia pestis is the causing agent of plague, an infectious disease transmitted by infected fleas' bites. The men contaminate accidentally when get in contact with rodents or other infected animals (dogs, camels, cats and rabbits) and its fleas. *Y. pestis* is a very homogeneous species, phenotypically, presenting one serotype, one phage type, and three biovars. Different molecular methods had been used in bacterial epidemiology studies for discrimination strains. However, for *Y. pestis* isolated in foci of northeast of Brazil, most of the markers had not succeed in discriminating strains from different hosts, periods and places of isolation. The pulsed-field gel electrophoresis (PFGE) is characterized by the separation of DNA fragments upon digestion of the chromosome with restriction endonucleases. This technique is considered the "gold standard" of the methods of molecular typing, being highly discriminatory and useful for many bacterial pathogens, including *Y. pestis* from other foci of the world. The objective of this work was to perform a genotyping of Brazilian strains of *Y. pestis* through the PFGE. Out of 43 *Y. pestis* strains, 36 had been used for the standardization of the technique and 22 strains which have been obtained before and during a plague outbreak occurred in the State of

Paraíba, 36 were for evaluation of the PFGE. According to the patterns found with the restriction endonuclease *AscI*, 19 profiles had been generated. These genotypes had been grouped into eight groups (A - H) genetically related. The PFGE technique proved to be able to differentiate strains of *Y. pestis* obtained from different counties, before and during the plague outbreak. According to the variability of the restriction patterns and the high discriminatory power, the PFGE technique can be used for differentiation and analysis of newly isolates. A standard PFGE protocol for genotyping Brazilian strains of *Y. pestis* can be useful in order to understand and control the expansion of plague in the country.

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