A Simplified Van Erth Single Nucleotide Polymorphism (SNP) Typing Method of Bacillus Anthracis Applicable by Traditional Thermocycler Machines

Abstract
SNP typing is now a well-established genotyping system in Bacillus anthracis studies. In the original standard method of Van Erth, SNPs at 13 loci of the B. anthracis genome were analyzed. In order to simplify and make appropriate this expensive method to low-budget laboratory settings, 13 primer pairs targeting the 13 corresponding SNPs were designed. Besides, a universal PCR protocol was developed to enable simultaneous amplification of all loci by conventional PCR machines. The efficiency of this approach was approved by applying on nine isolates of B. anthracis. We recommend using this modified procedure as an efficient alternative to Van Erth method until developing newer and affordable techniques.

Keywords: Bacillus Anthracis, Genotyping, SNPs, PCR