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Biofilm formation and genomic variability by ERIC-PCR of *Bacillus thuringiensis* strains

García-Gutiérrez Karina¹, Gutiérrez Dafne¹, Torres-Duran Patricia V¹, Ibarra Jorge E², Bravo Alejandra¹ and Gomez de Leon Patricia¹

¹Universidad Nacional Autónoma de México, México

²CINVESTAV, México

Bacillus thuringiensis (Bt) is of important agronomical research interest because of its beneficial use as biological pesticide. There are some limitations regarding the sub species classification. Studies at phenotypic and genotypic levels are important to ascertain its variability. The aim of this study was to evaluate the variability by ERIC-PCR and by biofilms formation among strains from Mexico. The genomic relationships between forty environmental strains from the collections of the CINVESTAV-Irapuato and IBT-UNAM were evaluated by ERIC-PCR and the biofilm-forming ability by a 96-well microplate-based assay at 72 and 96 hours of incubation. Thirty-nine different fingerprinting patterns based on 24 polymorphic fragments (139 to 2468 bp) were generated and used to construct a dendrogram. Almost all strains (95%) formed biofilms after 96 hours of incubation whose OD at 620 data were stratified into 4 categories as follows: 32.5% of them were strong (OD at 620 > 1.03), 35% were moderate (OD at 620 1.03-0.52), 27.5% were weak (OD at 620 0.51-0.27) and 5% were null (OD at 620 ≤ 0.26). The subset of strains from the CINVESTAV collection showed more heterogeneous biofilm-forming ability. A large intra-species genomic variability was observed among *Bt* isolates. At 96 hours of incubation, most strains from the CINVESTAV collection showed moderate to strong biofilm forming ability whereas those from IBT-UNAM collection were mainly weak biofilm producers. Results showed a large intra-species genomic variability in *Bt*. However, some strains could be correlated as they were found within clusters depending on the location of isolation.

Biography

Gomez de Leon Patricia is currently working as researcher in Universidad Nacional Autónoma de México, México.

patriciagomezdeleon@hotmail.com

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