Comparison of PCR-RFLP and ERIC-PCR Methods in the Study of Genetic Diversity among Strains of Xanthomonas

Tahereh Ghashghaei*[1]; Ezat Asgarani[1]; Mohammad Reza Soudi[2]

1-Department of Biology (Microbiology), Faculty of Sciences, Alzahra University, Tehran, Iran

2-National Laboratory of Industrial Microbiology, Faculty of Sciences, Alzahra University, Tehran, Iran

tghashghaei@yahoo.com

Background & Objectives: Xanthomonas bacteria are a group of Gram- negative bacteria that cause diseases in plants and also most of the species produce Xanthan gum via aerobic fermentation. Xanthan gum is used in numerous industries. In recent years, molecular Methods for identification of these bacteria have been plenty of work.

Methods: In this study 15 strains of Xanthomonas bacteria by using PCR-RFLP and ERIC-PCR (Entrobacterial Repetitive Intergenic Sequence) were evaluated in terms of genetic diversity. In PCR-RFLP, PCR amplification was performed using primer for ITS region, then PCR products were digested with four restriction endonuclease including AluI, MboI, BsnI and DdeI.

Results & Conclusion: Three enzymes including AluI, DdeI, BsnI showed two different profiles.among all strains, but one enzyme, MboI, showed three different profiles .In ERIC-PCR Methods Primers to ERIC sequences have been used in polymerase chain reactions designed to amplify regions between neighboring repetitive elements.ERIC- PCR evaluates genetic diversity in whole genome, therefore shows genetic diversity greater than PCR-RFLP and is more accurate and economical for the study of polymorphism.

Keywords: PCR- RFLP; ERIC- PCR; Xanthomonas; Genetic Diversity