SG–006

Effects of Environmental Stress Conditions on Biofilm Formation by Thermophilic *Geobacillus kaustophilus*

Tuba Korkmaz, İnci Özdemir
Gebze Institute of Technology, Molecular Biology and Genetic Department, Gebze, Kocaeli, i.ozdemir@gyte.edu.tr

Objectives: Biofilm is a functional consortium of microorganisms attached to the surface and is embedded in the extracellular polymeric substances (EPS) produced by the microorganisms. Microbial attachment and biofilm formation are influenced by number of factors including biological factors and environmental factors. In this study, we studied biofilm formation capability of thermophilic *Geobacillus kaustophilus* on polystyrene surface.

Materials and Methods: *Geobacillus kaustophilus* was grown in TSB medium at 55ºC for 5-7 days in 96-well plates. Biofilm formation was indirectly assessed by staining with 1% crystal violet and measuring crystal violet absorbance, using destaining solution. Biofilm forming cells were detected on nutrient agar.

Results: The maximum biofilm formation performed by *Geobacillus kaustophilus* at the optimum growth temperature. The ability of *Geobacillus kaustophilus* to form biofilm on polystyrene surfaces was enhanced by increasing glucose concentration up to 5% and increasing NaCl concentration up to 3% in TSB. After treatment with different concentrations of lysozyme and SDS, biofilm formation by vegetative cells on polystyrene surface was dramatically decreased. When compared to vegetative cells, *Geobacillus kaustophilus* spores tightly attached to polystyrene surface and they were less sensitive to several agents used in cleaning processes.

Conclusion: This study for the first time, reports the biofilm formation by Geobacillus kaustophilus. Informations applied by this research may influence the design of removal procedures and methods to control biofilms of thermophilic bacilli in diary manufacturing plants.

Keywords: Biofilm, spore, *Geobacillus kaustophilus*, thermophilic, polystyrene

SG–007

Bazı Nocardioform İzolatların 16S rRNA, *rpoB* ve *gyrB* Gen Dizi Analizleri ile Moleküler Sistematiği

Fadime Özdemir Koçak, Kamil Işık
Ondokuz Mayıs Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, Samsun, fadikocak@hotmail.com

Amaç: Farklı lokalitelerden izolasyonu gerçekleştirilen 23 Nocardioform izolatın 16S rRNA (16S), RNA polimerazın β alt ünitesini kodlayan (*rpoB*) ve DNA girazın β alt ünitesini kodlayan tip II DNA topoizomeraz (*gyrB*) gen dizi analizleri ile moleküler sistematik çalışmaların gerçekleştirilmesi ve sistematik olarak yerlerinin belirlenmesi amaçlanmıştır. Birde, izolatların moleküler tiplendirilmesi, mikolik asit profili ve morfolojik özelliklerle de desteklenmesi hedeflenmiştir.