

Various Detection Methods for Biofilm Inhibitor

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Biofilm formation is initiated by cell-to-cell communication mechanism called quorum sensing. Biofilm formation can be quantitatively measured on solid surface. This is a direct method for measuring biofilm formation, however not sensitive enough for the purpose of screening biofilm inhibitors from natural products. Liquid culture assay based on color development following the expression of a reporter enzyme β -galactosidase has been developed. Gene expression and enzyme activity appear when quorum sensing mechanism operates. This assay is sensitive and proved to be effective with fimbrolide but this method is based on whole cell and does not measure binding between transcription activator protein and the corresponding DNA sequence. In this report, based on gel retardation method we develop a biochemical method directly measuring the interaction between transcription activator protein and the corresponding DNA sequence. We constructed a recombinant *E.coli* BL21 for producing GST-fused LasR protein, a transcriptional activator in *Pseudomonas aeruginosa*, and purified LasR. It was confirmed that LasR binds to the lasB elastase promoter when an AHL is present. Inhibition effect of fimbrolide on AHL is under investigation.