Screening of Peptides Specifically Binding to Oral pathogen in Biofilm

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Most oral diseases are caused by biofilms that consist of multispecies communities. However, the interactions of community in health and caries pathogenesis are not well understood. To combat oral biofilm, S. mutans and 2 additional strain were selected for this study. Therefore, we suggested to find specific binding peptide of each strain using phage display and phage library was utilized to investigate specific binding peptides. At first, 3 rounds of biopanning was performed to seperate specific binding phages. Also, 20 individual phages from each strain were analyzed their DNA sequences. As a result, several sequences were conspicuous and 4 peptides were synthesized for confirming affinity. Furthermore, we will conduct binding affinity using peptides, and confirm to develop treatment of oral diseases by specifically killing pathogens in oral biofilm by binding with biological materials. This work was carried out with the support of "Cooperative Research Program for agriculture Science & Technology Development (Project No. PJ01267701)' Rural Development Administration, Republic of Korea. The authors are grateful for their support.