

## Development of Aptamer Based Detection Assay using Streptococcus Mutans Specific Binding Aptamers

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*Streptococcus mutans* have been associated with a primary aetiological agent of dental caries in animals and humans, and it causes tooth enamel corrosion, vulnerable to decay. The importance of *S. mutans* in the development of dental cares has been studied extensively. General technique known as diagnosis methods of *S. mutans* are based on PCR(Polymerase chain reaction) and MUTANS TEST Kit using antibody, which require multiple steps and limit detection range of below  $5 \times 10^5$ CFU/ml. Aptamers have great potential for biosensor assay development, given their small size, easy synthesis, a low cost, and high target specificity. In this study, we isolated DNA aptamer binding to *S. mutans* by SPR(Surface Plasmon resonance) and developed the aptamer-based detection assay such as ELISA(enzyme-immunosorbent assay). Aptamer selected by whole-cell of *S. mutans* show that high specificity and affinity more binding to *S. mutans* than to other species.

Therefore, this *S. mutans* specific aptamer and its assay method with high specificity can be used as an alternative method for the fast and precise detection of oral disease.