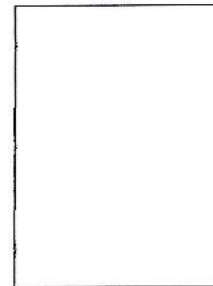


## OB-002 *Streptococcus sanguinis* as an opportunistic species in human oral cavity: adherence, colonization, and invasion

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**Background.** *Streptococcus sanguinis* (formerly *S. sanguis*) is a Gram-positive, facultative anaerobe, nonmotile, normal inhabitant of the human oral cavity, and a member of the viridans group of streptococci. Among the streptococcus, *S. sanguinis* is a primary colonizer in the human tooth surface or it is recognized as a 'pioneer' by forming dental plaque. **Purpose.** The aim of this paper is to review the role of *Streptococcus sanguinis* in the adherence to and invasion of human tissues. **Review.** *S. sanguinis* has been reported that it is associated with healthy tooth surfaces but not with caries. *S. sanguinis* tend to involved in an interspecies interactions with *Streptococcus mutans*, which is known as competition/coexistence within dental biofilm. In their colonization, this bacteria used enzyme sortase A (SrtA) to cleave LPXTG-containing proteins sequence and anchored the cell wall, while virulence factors in infective endocarditis involved housekeeping functions such as cell wall synthesis, amino acid and nucleic acid synthesis, and the ability to survive under anaerobic conditions. **Conclusion.** *S. sanguinis* from a single cell/several cell in line deposited onto a surface in the human body, developed to a mixed-species community through quorum sensing and cell-cell interaction, and finally formed complex biofilm. It is naturally proved that *S. sanguinis* like other oral streptococcus colonize of the tooth surfaces within communities of bacteria growing as biofilms and the integration of adhesins, receptors, signals, adaptation, and nutrition is needed in biofilm formation. In addition, it also involved cell-cell signaling, housekeeping gene that controlling nutritional adaptation, and host modulation as well.

**Keywords:** *Streptococcus sanguinis*; primary colonizer; adherence; colonization; invasion

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