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## Oral bacteria as potential probiotics for the pharyngeal mucosa.

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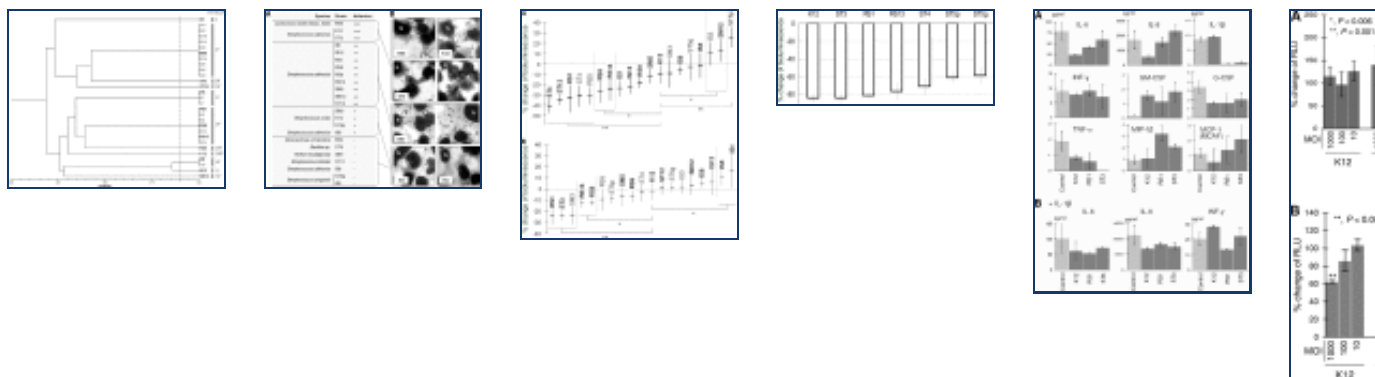
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### Abstract

The research described here was aimed at the selection of **oral bacteria** that displayed properties compatible with their **potential** use as **probiotics** for the **pharyngeal mucosa**. We included in the study 56 **bacteria** newly isolated from the pharynges of healthy donors, which were identified at the intraspecies level and characterized in vitro for their probiotic **potential**. The experiments led us to select two **potential** probiotic bacterial strains (Streptococcus salivarius RS1 and ST3) and to compare them with the prototype **oral** probiotic S. salivarius strain K12. All three strains efficiently bound to FaDu human epithelial **pharyngeal** cells and thereby antagonized Streptococcus pyogenes adhesion and growth. All were sensitive to a variety of antibiotics routinely used for the control of upper respiratory tract infections. Immunological in vitro testing on a FaDu layer revealed different responses to RS1, ST3, and K12. RS1 and ST3 modulated NF-kappaB activation and biased proinflammatory cytokines at baseline and after interleukin-1beta (IL-1beta) induction. In conclusion, we suggest that the selected commensal streptococci represent **potential pharyngeal** probiotic candidates. They could display a good degree of adaptation to the host and possess **potential** immunomodulatory and anti-inflammatory properties.

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