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A preliminary study of the effect of probiotic Streptococcus saliva

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A preliminary study of the effect of probiotic Streptococcus salivarius K12 on oral malodour parameters.

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Abstract

AIMS: To determine whether dosing with bacteriocin-producing **Streptococcus salivarius** following an antimicrobial mouthwash effects a change in **oral malodour parameters** and in the composition of the **oral** microbiota of subjects with halitosis.

MATERIALS AND RESULTS: Twenty-three subjects with halitosis undertook a 3-day regimen of chlorhexidine (CHX) mouth rinsing, followed at intervals by the use of lozenges containing either **S. salivarius K12** or placebo. Assessment of the subjects' volatile sulphur compound (VSC) levels 1 week after treatment initiation showed that 85% of the **K12**-treated group and 30% of the placebo group had substantial (>100 ppb) reductions. The bacterial composition of the saliva was monitored by culture and PCR-denaturing gradient gel electrophoresis (PCR-DGGE). Changes in the PCR-DGGE profiles occurred in most subjects following **K12** treatment. In vitro testing showed that **S. salivarius K12** suppressed the growth of black-pigmented bacteria in saliva samples and also in various reference strains of bacteria implicated in halitosis.

CONCLUSIONS: Administration of bacteriocin-producing **S. salivarius** after an **oral** antimicrobial mouthwash reduces **oral** VSC levels.

SIGNIFICANCE AND IMPACT OF THE STUDY: The outcome of this **preliminary study** indicates that the replacement of bacteria implicated in halitosis by colonization with competitive bacteria such as **S. salivarius K12** may provide an effective strategy to reduce the severity of halitosis.

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