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Streptococcal bacteriocins and the case for Streptococcus salivarius as model oral probiotics.

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Abstract

Members of the Gram-positive bacterial genus **Streptococcus** are a diverse collection of species inhabiting many body sites and range from benign, nonpathogenic species to those causing life-threatening infections. The streptococci are also prolific producers of **bacteriocins**, which are ribosomally synthesized proteinaceous antibiotics that kill or inhibit species closely related to the producer bacterium. With the emergence of bacterial resistance to conventional antibiotics, there is an impetus to discover, and implement, new and preferably 'natural' antibiotics to treat or prevent bacterial infections, a niche that bacterial interference therapy mediated by **bacteriocins** could easily fill. This review focuses on describing the diversity of **bacteriocins** produced by streptococci and also puts forth a **case** for **Streptococcus salivarius**, a nonpathogenic and numerically predominant **oral** species, as an ideal candidate for development as the **model probiotic** for the **oral** cavity. *S. salivarius* is a safe species that not only produces broad-spectrum **bacteriocins** but harbors bacteriocin-encoding (and bacteriocin-inducing) transmissible DNA entities (megaplasms).

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