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Prevention of streptococcal pharyngitis by anti-Streptococcus pyc

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[Indian J Med Res.](#) 2004 May;119 Suppl:13-6.**Prevention of streptococcal pharyngitis by anti-Streptococcus pyogenes bacteriocin-like inhibitory substances (BLIS) produced by Streptococcus salivarius.**[Tagg JR.](#)

## Author information

**Abstract**

**BACKGROUND & OBJECTIVES:** *Streptococcus salivarius* is a numerically prominent member of the human oral microbiota that produces a variety of **bacteriocin-like inhibitory substances (BLIS)** having in vitro **inhibitory** activity against *S. pyogenes*. Our previous studies of *S. salivarius* isolates from children using a deferred antagonism **BLIS** production (P)-typing scheme showed that the 9 per cent of children having large populations of P-type 677 *S. salivarius* experienced fewer *S. pyogenes* acquisitions than either the 11 per cent of children having predominant P-type 226 populations or the 60 per cent of children with largely non-**inhibitory** (P-type 000) *S. salivarius*. Amongst the other **BLIS** P-types detected were a number of strongly-**inhibitory** (P-type 777) *S. salivarius*. In the present study the **inhibitory** agents **produced** by prototype strains of P-types 226, 677 and 777 *S. salivarius* are compared.

**METHODS:** The prototype **BLIS**-producing *S. salivarius* strains SN, 20P3, and K12 were isolated from tongue swabbings. **BLIS** P-typing was done using standard procedures. The **BLIS** molecules were purified and characterized.

**RESULTS:** *S. salivarius* SN (P-type 226) produces a heat-labile muramidase. *S. salivarius* 20P3 (P-type 677) produces the 2315 Da lantibiotic salivaricin A and *S. salivarius* K12 (P-type 777) produces two lantibiotics; salivaricin A2 (2368 Da) and salivaricin B (2733 Da).

**INTERPRETATION & CONCLUSION:** The P-type 777 *S. salivarius* strain **produced** salivaricin A2 and salivaricin B. The combined production of two anti-*S. pyogenes* **BLIS** activities by this strain indicates that it could be adopted as a colonizing strain in bacterial interference trials.

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