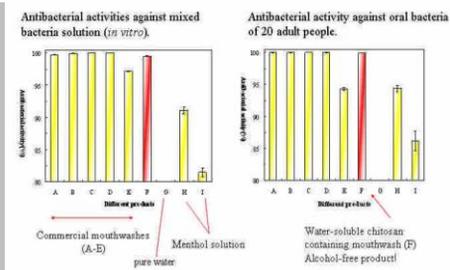


Introduction

Dental caries is still a major oral health problem in most industrialized countries. The development of dental caries primarily involves *Lactobacilli* spp. and *Streptococcus mutans*. Although the antibacterial ingredients are used against oral bacteria to reduce dental caries, some reports show partial antibacterial ingredients would result in **side effects**. The invention shows the antibacterial activity of water-soluble chitosan and proves the its feasibility as an alternative to commercial mouthwash.

A Novel Alcohol-free Mouthwash

(Taiwan Patent No.:M399701)



Innovation

Specifications:

- 1.The novel mouthwash is **alcohol-free** and without **chemically synthesized bactericides** addition.
- 2.The main ingredient: water-soluble chitosan; other: glycerin, menthol, food coloring, sugar alcohols.

Product Features:

The MBC of water-soluble chitosan on oral bacteria were only 500 ppm. Only **5 s** of contact between water-soluble chitosan and oral bacteria attained **>99.60%** antibacterial activity. The novel mouthwash demonstrated **significantly** antibacterial activity that was similar to that of commercial mouthwash (**>99.91%**) in both **in vitro** and **in vivo** experiments. In addition, the alcohol-free mouthwash exhibited no cytotoxicity and no oral stinging. To the best of our knowledge, this was the **first invention** to combine in vitro and in vivo investigations to reveal the antibacterial properties of water-soluble chitosan-containing mouthwash.

Promoting value

- 1.The cost of novel mouthwash is around US\$ 6/500 mL **cheaper than** other commercial products.
- 2.No cytotoxicity and **good taste**.
- 3.Antibacterial activity of the alcohol-free mouthwash was **similar to** commercial mouthwash.

Ying-Chien Chung, Chiu-Yu Cheng, Yu-Cheng
Lin, Chia-Fen Tsao

E-mail: cycheng@cc.cust.edu.tw
Taiwan Pat. Apl. No.: M399701



中華科技大學