

Final Report

Analysis of Antimicrobial Activity of DentaTabs

Aim: Study was conducted to determine if DentaTabs produced by Tartar Shield Pet Products exhibited antimicrobial activity against four oral bacteria, *Streptococcus mutans*, *Actinomyces viscosus*, *Porphyromonas gingivalis* and *Porphyromonas asaccarolyticus*.

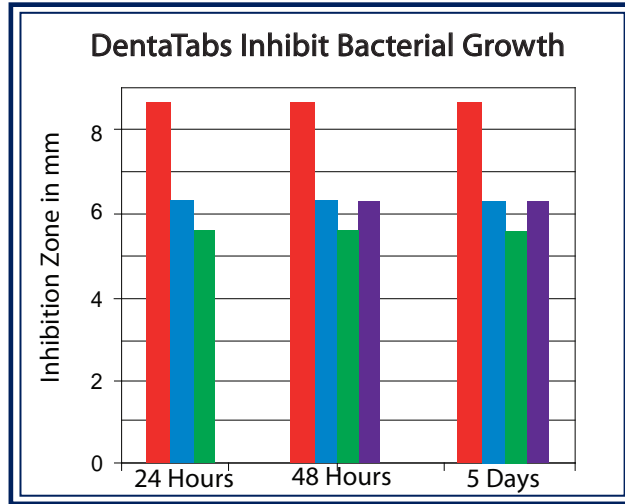
Experimental Design: Anaerobic CDC blood agar plates were individually swabbed with fresh 24 h broth cultures of *Streptococcus mutans* UA159, *Actinomyces viscosus* (ATCC 43146), *Porphyromonas gingivalis* (ATCC 33277) and *Porphyromonas asaccarolyticus* (ATCC 25260) to provide a confluent lawn of bacterial growth. Five minutes after swabbing the plates (to allow the inoculum to absorb into the agar), 5 ul of the dissolved tablet (in 250 ml of dH₂O or a 1:10 dilution of the dissolved tablet) were placed onto three designated places on the plates and allowed to absorb into the agar. The plates were incubated agar-side up at 37°C in an anaerobic GasPak jar for up to 5 days. Plates were examined at 24 and 48 h and 5 days for zones of inhibition of growth for each bacterial species. The diameter of each zone was measured in mm.

Test Specimens: dissolved DentaTabs

Results: The undiluted DentaTabs inhibited growth of three bacteria (*S. mutans*, *A. viscosus* and *P. gingivalis*) at 24 hours and all four bacteria (*S. mutans*, *A. viscosus*, *P. gingivalis* and *P. asaccarolyticus*) at 48 hours. Furthermore, the 1:10 dilution of the tablet inhibited the growth of *P. gingivalis* at 48 hours. None of the other bacteria were inhibited at the 1:10 dilution. The negative control plate without any bacteria did not produce any bacterial growth.

These *in vitro* results indicate significant inhibition of growth of the four bacteria suggesting that the product may reduce the growth of these organisms *in vivo*.

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- Streptococcus Mutans
- Actinomyces Viscosus
- Porphyromonas Gingivalis
- Porphyromonas Asaccharolyticus