Laboratory testing is often used to assess clinical activity of multibenefit fluoridated dentifrices. To predict tartar control effects, the efficacy of formulations can be assessed in a clinically validated plaque biofilm calcification model (J Dent Res 71: 173 (#543-544) 1992). **Objectives:** This study compared US and Mexico variants of multibenefit dentifrices toward reducing plaque mineralization susceptibility of biofilms in vitro. **Methods:** Plaque biofilms were prepared and mineralized by alternate immersion of glass rods in human saliva and artificial mineralization solution (White et al., J Dent Res. 70; 276 (#84) 1991). Treatments of 25% w/w dentifrice/water slurries were carried out for 60 seconds daily for 6 days, between saliva and mineralization solution immersions. Plaque calcification levels were determined by digestion and ICP optical emission spectroscopy. Dentifrices tested included: I: MX Colgate® Cavity Protection; II: Crest® Regular Cavity Protection (neg. control); III: Mexico (MX) Colgate Total (CT) 12 Advanced Fresh; IV: US CT CleanMint; V: MX CT12 ProfessionalClean; VI: MX CT12 ProfessionalSensitivity; VII: MX CT12 ProfessionalWhitening; VIII: MX CT12 CleanMint; IX: MX CT12 WhiteningGel; X: US Crest Tartar Control; XI: US Crest Pro-Health; XII: MX Crest Oral-B Pro-Salud. For tartar control effects, CT dentifrices use GantrezTM Acid copolymer, Crest TC uses pyrophosphate and Crest Pro-Health/Pro-Salud (US and MX) use Glass H sodium hexametaphosphate (HMP). **Results:** % reduction in mineralization vs. II a rb Students t: I -2.2a; II 0.0a; III 0.6a; IV 1.4a; V 2.6a; VI 6.0a; VII 7.8a; VII 9.3ab; IX 11.0ab; X 23.9b; XI 58.0c; XII 69.0c. **Conclusions:** All tartar control dentifrices provided numerical reductions in plaque mineralization in vitro. There were no differences in performance between Mexico and US versions of these base formulations. In general, dentifrices based on HMP provided the largest reductions in plaque mineralization.

**INTRODUCTION**

The modified Plaque Growth and Mineralization Model (mPGM) is an in vitro test that measures the tartar control performance of dentifrices. Human saliva is used to grow in vitro plaque and the experimental conditions are designed to promote plaque calcification similar to in vivo conditions.

**MATERIALS AND METHODS**

**Biofilm Growth:** Polished glass rods were used to grow plaque using enriched pooled saliva containing sucrose overnight. Plaque biofilm growth was then promoted using freshly enriched pooled saliva in the morning and afternoons. Plaque formation and mineral enrichment take place over a two week period – 8 full days of treatments.

**Treatment and Mineralization:** Starting at day two, plaque was treated with 25% dentifrice slurry (60 sec) in the morning, subsequently dipped in mineralization medium [2 mM Ca2+, 2 mM PO43-, 150mM KCl, and 20mM Cacodylic Acid to pH 7.4 (4 hrs)] and then replenished with freshly pooled saliva (O/N). These treatment/mineralization/biofilm growth cycles were carried out for an additional 8 treatment days.

**Dentifrices tested:**包括各种含抗牙菌斑成分的」GantrezTM Acid copolymer, Crest TC uses pyrophosphate and Crest Pro-Health/Pro-Salud (US and MX) use Glass H sodium hexametaphosphate (HMP). **Results:** % reduction in mineralization vs. II a rb Students t: I -2.2a; II 0.0a; III 0.6a; IV 1.4a; V 2.6a; VI 6.0a; VII 7.8a; VII 9.3ab; IX 11.0ab; X 23.9b; XI 58.0c; XII 69.0c. **Conclusions:** All tartar control dentifrices provided numerical reductions in plaque mineralization in vitro. There were no differences in performance between Mexico and US versions of these base formulations. In general, dentifrices based on HMP provided the largest reductions in plaque mineralization.

**RESULTS**

**Conclusions**

All tartar control dentifrices provided numerical reductions in plaque mineralization in vitro. There were no differences in performance between Mexico and US versions of these base formulations. In general, dentifrices based on HMP provided the largest reductions in plaque mineralization.

**References:**


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