Research about Tooth Whitening and Bacteria Sticking Capability with Using Dentifrice Including Nano-Hydroxyapatite, Sodium Metaphosphate

Yong-duk Park 1, A, Ji-hwan Kim 1, B, Kyung-sook Hwang 1, C
1Dept. of Preventive Dentistry, Kyung Hee Univ., #1 Haegi-Dong, Dongdaemun-Gu, Seoul 130-701, South Korea,
2Dept. of Dental Laboratory Sciences, College of Health Sciences, Korea Univer. 1 Jeongneung-Dong, Dong, Seongbuk-Gu, Seoul, 136-703, South Korea,
3Dept. of Dental Tech., Shing-Hong College #117 Hwayeon-Dong, Uijongbu, 480-761, Kyangji-Du, South Korea

*Email: 2875@khu.ac.kr; 3jh2304@ebold.com, bks3435@hanmail.net, *corresponding author

Key Words: Sodium Metaphosphate, Nano-hydroxyapatite, Remineralization, Tooth Whitening

Abstract. Hydroxyapatite has high affinity rate with organic substance in an oral cavity, therefore lately nano-sized hydroxyapatite is extensively researched to increase affinity to tooth and remineralization. The objective of this research is indirectly to investigate the effect of nano-hydroxyapatite on remineralization using evaluation about whiteness and bacterial contamination of the bovine teeth. We have designed in vitro test for this purpose. The bovine teeth are sliced into human teeth size then the baseline whiteness of total 60 teeth is measured and navigated into 3 groups by cross-matching according to the whiteness. These samples were embedded into resin mold and underwent mechanical brushing during fixed schedule. The inorganic minerals and organic substance in enamel are dissolved by the oral bacteria. Then we have designed the in vitro remineralization test. The remineralization effect of the nano-HA dentifrice is measured after test in group and each other 3 group. The whiteness of teeth was maintained in test group after test and each other 3 group. The teeth whiteness is measured again for 3rd time and the bacteria from the surface of teeth are cultivated on agar badge for 3 days. Then the sample teeth were submerged into the same solution with oral bacteria for 10 days. The remineralization effect of the nano-HA dentifrice is measured after test in group and each other 3 group. The remineralization effect of the nano-HA dentifrice is measured after test in group and each other 3 group. The remineralization effect of the nano-HA dentifrice is measured after test in group and each other 3 group. The remineralization effect of the nano-HA dentifrice is measured after test in group and each other 3 group.

Introduction

The economic development has brought many kinds of different functional dentifrices in the market.