

**The substantivity and remineralization effect of bioactive glass on the demineralized dentin****So-Yeon Mo**

Kyung Hee University School of Dentistry, Seoul, Korea

The demineralization of dentin is the initial pathologic changes that can lead to destruction of the dentin at a rapid rate. Bioactive glass (BAG) is an excellent biocompatible material for tissue mineralization. So, the aim of this study is to evaluate the possibility of remineralization of demineralized dentin using bioactive glass. Twenty extracted caries-free human 3<sup>rd</sup> molars were obtained. Two dentin specimens were obtained from each tooth using a slow-speed diamond saw (Isomet, Buehler Ltd., USA) with water-cooling. They were completely demineralized in 0.2 M formic acid solution for 10 days, and thoroughly washed with distilled water. After that, they were randomly divided into two groups (n=40): Demineralized dentin group (DE), Bioactive glass 45S5 applied group (BAG). The specimens of DE group were stored in distilled water, while those of BAG group were immersed in the slurry of BAG/deionized water (1:1 mixture) for 7 days. We weighed the specimens at three different stages to evaluate the substantivity of BAG: demineralization, remineralization, and ultrasonic application after remineralization. FE-SEM/EDX, Raman Spectroscopy, XRD Analysis were additionally performed to analyze the remineralization effect of BAG. As a result, we observed increase of weight in BAG group after remineralization using BAG. In the FE-SEM/EDX, BAG particles were observed on the demineralized collagen matrix in the BAG group. The crystalline phase of the dentin surface was confirmed through XRD and RAMAN in the BAG-treated group. It is similar to the crystalline phase in mineralized dentin. Within the limitation of this study, BAG is able to remineralize the demineralized dentin although it is completely demineralized.

**Biography**

So-Yeon Mo

So-Yeon Mo has completed her master degree at 2014 from Kyung Hee University and is in the PhD course in the same university. And also she undergo the residency course of conservative dentistry in Kyung Hee University Dental Hospital.

Duck-Su Kim

Associate Professor in Dept. of Conservative Dentistry, School of Dentistry, Kyung Hee University

iammosso@hanmail.net

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