

A New Modified SLA and SLA Active Surface Treatment for Dental Implants

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Poster Session

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**Session Implant Surfaces and Cell Cultures**

Presentation 1 of 17 in this Session

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**D. Erdilek**<sup>1</sup>; T. Buğur<sup>2</sup>; A. Tas<sup>3</sup>; O. F. Oksuzomer<sup>4</sup>; Y. Guven<sup>5</sup>

<sup>1</sup>Restorative Dentistry, Istanbul University, Faculty of Dentistry, Istanbul, Turkey; <sup>2</sup>DTI Implant Firm, Istanbul, Turkey; <sup>3</sup>GMBAE, TUBITAK MAM, Kocaeli, Turkey; <sup>4</sup>Chemical Engineering, Istanbul University Faculty of Engineering, Istanbul, Turkey; <sup>5</sup>Basic Sciences, Istanbul University Faculty of Dentistry, Istanbul, Turkey

**Objectives:** Implant surface modifications are key factors for initial interactions between the implant and osteoblasts and hence dental implant healing. The implants are endowed with combination of mechanical strength, corrosion resistance and biocompatibility. The aim of this in vitro study was to evaluate the adhesion and spreading assay of Saos-2 osteoblasts to SLA surface implants compared to physically modified SLA active implants.

**Methods:** Titanium implants were modified by surface conditioning with different sand blasting and acid etchings (machine surface, RBM surface, SLA surface and SLA Active surface). Surface topography was analyzed by scanning electron microscopy (SEM). Saos-2 osteoblasts were cultivated on the samples. After 1 h., 5 h. and 24 h., total cell numbers which are seeded on the samples, are determined with Hoechst dye and cells were stained with  $\alpha$ -actin antibody for visualized the ratio of spreading cell by fluorescence microscopy. Cell morphology of Saos-2 cells was visualized after 1 week cultivation time on the samples by using SEM.

**Results:** Cell numbers result showed that number of adhesive cells were increased depend of the time and after 24 h., the highest number of cells were attached on SLA-Active (80,27%) disk than the others (SLA 64%, Machined 48,57% and Polished 47,67%). The results of the cell spreading assay showed that there was no significant difference between SLA surface and SLA-Active surface after 24 hrs. However; the rate of the cell spreading of SLA-Active surface (40, 38%) was higher than SLA surface (38,56%). There was significant difference between SLA-Active and machined surface and polished surface.

**Conclusions:** Osteoblast cells were cultured and spreading successfully on the SLA and SLA-Active surfaces. Osteoblast cells spreading is important for the success of the dental implants.

**Keywords** modified SLA, SLA Active surface, osteoblasts

**Disclosure Statement:**

The submitter must disclose the names of the organizations with which any author have a relationship, the nature of the relationship, and the clinical or research area involved. The following is submitted: **NONE**

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Signed by **Dina Erdilek**

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International Association for Dental Research (IADR)  
1619 Duke Street, Alexandria, VA 22314-3406 USA

Phone +1.703.548.0066

Fax +1.703.548.1883

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