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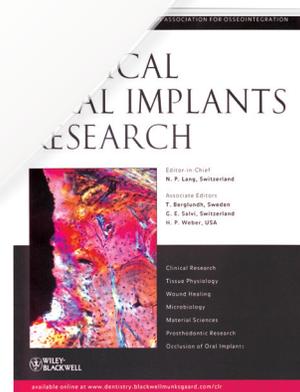
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”

Behavior of two osteoblast-like cell lines cultured on machined or rough titanium surfaces”\*

Lior Shapira, Amal Halabi

\*Shapira L, Halabi A. Behavior of two osteoblast-like cell lines cultured on machined or rough titanium surfaces. Clin. Oral Impl. Res. 20, 2009; 50-55. doi: 10.1111/j.1600-0501.2008.01594.x



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## “Behavior of two osteoblast-like cell lines cultured on machined or rough titanium surfaces”

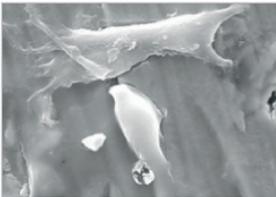
MG63 Rough



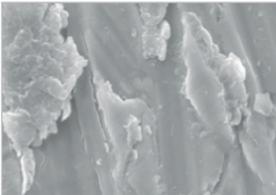
Saos-2 Rough



MG63 Machined



Saos-2 Machined



Scanning electron micrographs of MG63 and Saos-2 cells on rough and machined titanium surfaces. (magnification x 4000).

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## ABSTRACT.

### Background

Two osteosarcoma-derived cell lines have been extensively used to investigate the biological events occurring on titanium surfaces: MG63 and Saos-2. However, the behavior of the two lines on different titanium surfaces has never been compared.

### Aim

The aim of the present study was to compare the behavior of MG63 and Saos-2 cells on two different titanium surfaces, machined and rough (sandblasting and acid-etched). We compared cell proliferation and morphology, alkaline phosphatase (ALP) activity and secretion of osteocalcin (OC).

### Results

The most pronounced difference between the two cell lines was that ALP activity in the Saos-2 cells was 10-fold higher than in the MG63 cells. The proliferation rate of the MG63 cells was much higher than that of the Saos-2 cells at all the tested cell concentrations. MG-63 cells, but not Saos-2 cells, grown on rough surface titanium proliferated more rapidly than cells grown on machined surfaces. Morphological analysis revealed that Saos-2 cells and cells grown on the rougher surface, displayed a more mature phenotype. The level of OC secreted by the Saos-2 cells, but not the MG63 cells, were higher on the rough surface than on the machined surface.

### Conclusions

This study shows that Saos-2 cells exhibit a more mature osteoblast phenotype, compared with that of MG63 cells, rendering them a good candidate for an in vitro model of osseointegration.