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[\[PDF \(1339K\)\]](#) [\[References\]](#)**Surface analysis of commercially pure titanium implant retrieved from rat bone. part 1: Initial biological response of sandblasted surface**[Kouichi WATANABE](#)¹⁾, [Seigo OKAWA](#)¹⁾, [Mitugu KANATANI](#)¹⁾ and [Kikuo HOMMA](#)¹⁾

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Abstract:

To gain insight on the early biological response to commercial pure titanium (cpTi), the surface properties of cpTi implants retrieved from rat bone were examined by X-ray photoelectron spectroscopy (XPS). To this end, semi-cylindrical bullets, 1.1 mm in diameter and 3.5 mm in length, were implanted into the femurs of Wistar rats and then retrieved after either 3 hours or 7 days. Regardless of implantation interval, elements of Ti, O, C, and N were observed on the retrieved implants and that the thickness of the adsorbed film (mainly protein) was estimated to be about 2.5 nm. Small amounts of both Ca and P were also detected, whereby the Ca/P atomic ratios after 3 hours and 7 days were very small compared to that of hydroxyapatite. Furthermore, no correlation was found between the Ca and P distributions in the element maps. In conclusion, no calcium phosphate compounds were formed on the implant *in vivo* after 7 days.

Key words:[Dental implant](#), [Protein adsorption](#), [X-ray photoelectron spectroscopy](#)[\[PDF \(1339K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

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