Short Communication

Corrosion Behaviour of Ti–6Al–4V Alloy as Dental Implant Containing Fluoride Ions

Yingying Xu, Jing Wang, Xingle Zhang, Peng Wang, Jinghua Shi and Feng Huo^{*}

Department of Stomatology, Affiliated Hospital of Chengde Medical University, Chengde, Hebei 067000, P.R. China

^{*}E-mail: huofeng9876@163.com

doi: 10.20964/2017.11.04

Received: 15 July 2017 / Accepted: 26 August 2017 / Published: 12 October 2017

This work investigated the corrosion performance of Ti–15Mo alloy in NaCl (0.15 M) + NaF (different concentrations) and compared the protective capacity of this alloy and two other alloys (Ti–6Al–4V and CP-Ti) to ascertain their suitability for application in dental implanting. The Ti–6Al–4V, Ti–15Mo and CP-Ti alloys exhibited steady-state current densities of 6, 2 and 1 $\mu\text{A}/\text{cm}^2$, respectively, when investigated in NaCl (0.15 M) + NaF (0.03 M) at 200 mV (versus SCE). This result suggested desirable corrosion resistance of the three alloy samples in the potential range that could exist in the oral environment.

Keywords: Corrosion; Dental implant; Fluoride ions; Electrochemical study; Ti–6Al–4V alloy

[FULL TEXT](#)

© 2017 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).