Brazilian Oral Research
Print version ISSN 1806-8324

Abstract

QUEIROZ, Gláucia Maria Oliveira de et al. Electrochemical behavior and pH stability of artificial salivas for corrosion tests. *Braz. oral res.* [online]. 2007, vol.21, n.3, pp. 209-215. ISSN 1806-8324. doi: 10.1590/S1806-83242007000300004.

It is assumed that the compositions of artificial salivas are similar to that of human saliva. However, the use of solutions with different compositions in *in vitro* corrosion studies can lead dissimilar electrolytes to exhibit dissimilar corrosivity and electrochemical stability. This study evaluated four artificial salivas as regards pH stability with time, redox potentials and the polarization response of an inert platinum electrode. The tested solutions were: SAGF medium, Mondelli artificial saliva, UFRJ artificial saliva (prepared at the School of Pharmacy, Federal University of Rio de Janeiro, RJ, Brazil) and USP-RP artificial saliva (prepared at the School of Pharmaceutical Sciences of Ribeirão Preto, University of São Paulo, SP, Brazil). It was observed that pH variations were less than 1 unit during a 50-hour test. The SAGF medium, and the UFRJ and USP-RP solutions exhibited more oxidizing characteristics, whereas the Mondelli solution presented reducing properties. Anodic polarization revealed oxidation of the evaluated electrolytes at potentials below +600 mV_{SCE}. It was observed that the UFRJ and USP-RP solutions presented more intense oxidation and reduction processes as compared to the Mondelli and SAGF solutions.

Keywords : Saliva, artificial; Hydrogen-ion concentration; Corrosion; Sodium fluoride.

• abstract in portuguese • text in english • pdf in english

Sociedade Brasileira de Pesquisa Odontológica

Av. Lineu Prestes, 2227
Caixa Postal 8216
05508-900 São Paulo SP - Brazil
Tel./Fax: +55 11 3091-7810
e-Mail
bor@sbpqo.org.br