

COMPARISON OF THE BEHAVIOR OF A NEW DENTAL CoCr MoNbZr ALLOY WITH AND WITHOUT INCORPORATED Ag

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Abstract. *The electrochemical stability of CoCr based alloys is due to the passive oxide film grown on their surface, but it is to notice the aspect of ion release in their working time in this paper a new CoCrMo dental alloy alloy with small amount of niobium and zirconium (6% Nb and 0.8% Zr respectively) is modified by incorporation Ag on its surface. This paper aims to compare the ion release from CoCrMoNbZr in Tani Zuchi artificial saliva at various periods of time before and after Ag nanoparticles incorporation by pulse electrodeposition. The surface analysis revealed that Ag are nanoparticles with 100 nm average diameter. The ion release determination with inductively plasma mass spectrometer (ICP-MS established that after Ag incorporation the surface is more protective and Zr release decreased significantly. Electrochemical tests in artificial saliva Tani Zuchi sustain the ICP-MS determination which indicate better performance of alloy CoCr MoNbZr after Ag incorporation.*

Keywords: CoCr alloy, electrochemistry, ion release, nanoparticles, artificial saliva.

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