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**PREPARATION AND CHARACTERIZATION OF Ti-10Mo-xMn (x=0,2,4,6,8) SYSTEM ALLOYS FOR BIOMEDICAL APPLICATIONS**

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Beta-type Ti alloys have been the subject of several studies because they have low elastic modulus, a very important property in biomaterials to avoid the stress shielding effect (1). The objective of this study was the preparation and characterization of Ti-Mo-Mn alloys with low elastic modulus and to analyse the influence of some thermomechanical treatments on the structure, microstructure and some selected mechanical properties of the alloys (2). The studied alloys were melted in an arc-furnace, subjected to a homogenization heat treatment, followed by the hot-rolling process. After each processing step, X-ray diffraction (XRD), optical (OM) and scanning electron microscopy (SEM) were performed to study the structure and microstructure of the samples. The mechanical properties were analysed by Vickers microhardness and elasticity modulus. The cytotoxicity of the alloys was evaluated using MTT tests. The MO predicted that the selected alloys would only present beta phase, which was confirmed with the structural and microstructural characterization. In OM and SEM measurements, grain boundaries were present from the  $\beta$  phase and the XRD results presented only peaks of this phase. With respect the mechanical properties, the hardness remained high and the elasticity modulus below the alloys already used commercially used as biomaterials. The modulus values decreased compared with cp-Ti by the addition of the alloying elements (Mo and Mn are  $\beta$ -stabilizing agents). The extracts of the alloys did not inhibit proliferation of fibroblast cells in a short period of time and the number of viable cells were like the negative control and higher to the positive control. (Financial support: CAPES, CNPq and FAPESP).