Microstructure, mechanical properties and cytocompatibility of stable beta Ti–Mo–Ta sintered alloys

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We have synthesized titaniumbased alloys containing molybdenum and tantalum elements by powder metallurgy. The microstructure, the residual porosity and the mechanical properties of the sintered Ti–Mo and Ti–Ta–Mo alloys were investigated by using optical and electronic microscopy, Xray diffraction, microhardness and compression tests. The cytocompatibility of the different alloys was evaluated by the assessment of bone cell density, migration and adhesion after 14 days incubation. All the alloys present a high ductility and an excellent cytocompatibility, which make these materials useful for medical implants.