In this study, samples of a cobalt-based alloy that underwent a surface treatment were evaluated. The samples, which were obtained by casting alloy ASTM F 75, were ground and polished on one side until a mirror finish was obtained. The samples were encapsulated in a mixture of 70% tricalcium phosphate and 30% bioglass (TCP-BG) using uniaxial pressure, treated at 1220°C for 1 h and subsequently tempered in water. The characterization of the sample indicated that part of the ceramic encapsulating material was mechanically incorporated on the metallic surface by growth of the oxide layer of the alloy. After thermal treatment, a series of specimens were submerged in a solution with 5-fold simulated body fluid (5SBF) for 3, 5 and 7 days. Characterization by scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS) and X-ray diffraction (XRD) indicated nucleation and growth of a homogenous layer of apatite, beginning on the third day the sample was submerged.

**Keywords:** Cobalt-Based Alloy, 5SBF, Apatite

**Presenting author's email:** carlosortiz@uadec.edu.mx