

Effect of bovine serum albumin on immersion corrosion and tribocorrosion behavior of Zn-0.4Mn alloy in simulated body fluid

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Abstract The related research on the corrosion of degradable Zn-Mn alloy in vitro is not comprehensive. This work investigated the effect of bovine serum albumin (BSA) on corrosion of Zn-Mn alloy in simulated body fluid. The corrosion influence of BSA on the alloy is related to the immersing time. When tribocorrosion occurs, the average depth of frictional wear scratches decreases by 10.7% and 57.1% after adding 0.1 g/L and 10 g/L BSA, respectively. It can be further reduced to 68.1 % after applying a voltage of -1.05 V (vs. SCE). This work contributes to degradation control of Zn-Mn alloy implants in vivo.

Keywords Zn alloys; Albumin; Immersion corrosion; Tribocorrosion.

Reference

[1] B.-Y. Li, Z.-Z. Shi, W.-B. Geng, et al., Effect of bovine serum albumin on immersion corrosion and tribocorrosion behavior of Zn-0.4Mn alloy in simulated body fluid, *Corros. Sci.* 235 (2024) 112165.