عنوان مقاله:

MG-63 cell behavior on Ti6Al4V implant surfaces modified by pulsed Nd-YAG laser

محل انتشار:

اولین کنگره بین المللی مهندسی بافت و پزشکی بازساختی ایران (سال: 1397)

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خلاصه مقاله:

Introduction Titanium alloys are commonly used in orthopedic devices due to their good corrosion resistance, high specific strength and excellent biological response. Surface modification of these alloys causes better osseointegration of bone. Objectives In this study, by use of a pulsed Nd-YAG laser with different frequencies, the surface topography of Ti6Al4V alloy was changed. Methods In order to investigate the effect of this type of texturing on the cell behavior, MG-63 osteoblast cells were cultured on the modified surfaces and control samples. Furthermore, MTT cytotoxicity assay and cell attachment assay were performed. Results The results revealed that the viability and morphology of cells in treated samples were better than the controls. The best result was obtained from the specimen with the highest roughness index

کلمات کلیدی:

Ti6Al4V, Laser surface modification, Cell behavior, Surface roughness, Biological assays