

## عنوان مقاله:

Evaluation of bioactivity of cardiomyoblasts on polyurethane-polycaprolactone scaffolds

## محل انتشار:

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

تعداد صفحات اصل مقاله: 1

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## خلاصه مقاله:

**Introduction** Myocardial infarction (MI) retains the highest mortality rate among cardiovascular diseases globally. Cardiac tissue engineering has been employed as a promising approach to develop the biological constructs that mimic myocardial tissue. Biodegradable polyurethane elastomers have been utilized in fabrication of the elastomeric scaffolds for myocardial tissue repair and regeneration. **Objectives** Here, we have developed a new compliant patch for cardiac tissue to support the growth of cardiomyoblasts. **Methods** New polyurethane-polycaprolactone composite (PU-PCL) scaffolds were fabricated by the solvent casting/solvent evaporation and solvent casting/particulate leaching methods. Metabolic activity and morphology of the cardiomyoblasts were investigated using MTT-assay and SEM microscope, respectively. Expression of the cardiac specific proteins on the scaffolds were evaluated by immunofluorescence staining and quantitative real-time PCR. **Results** Our results demonstrated that these blend scaffolds exhibited high cell metabolic activity for cardiomyoblasts and also enabled cells to proliferate and express cardiac marker proteins at higher rates compared to the PU scaffold. Histological examination of the subcutaneous transplanted scaffolds after two months showed low immunological response and tunable degradation rate in the blends. **Conclusion** It is illustrated that the PU-PCL scaffolds could potentially provide a substrate with suitable cell-biomaterial interactions for cardiomyoblasts

## کلمات کلیدی:

Tissue engineering, Polyurethane, Cardiac tissue

## لینک ثابت مقاله در پایگاه سیویلیکا:

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