

عنوان مقاله:

Injectable hydrogels for myocardial tissue regeneration

محل انتشار:

اولین کنگره بین المللی مهندسی بافت و پزشکی بازساختی ایران (سال: ۱۳۹۷)

تعداد صفحات اصل مقاله: ۱

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خلاصه مقاله:

Cardiovascular diseases and myocardial infarction are counted as the major causes of mortality around the world. Not treating the damaged part of the heart due to myocardial infarction, within a few years, can result in total heart failure. Different approaches, such as medication, invasive treatment and finally heart transplant have been used until now, however, injectable hydrogels can provide a combination of cell therapy and medication in a minimally invasive way. Utilization of natural and synthesized polymers which are sensitive to special stimuli such as temperature, pH and UV radiation together are an appropriate solution for producing injectable hydrogels for the purpose of creating the expected mechanical and biological features. Choosing the type of biomaterials, however, is one of the main challenges. Optimizing the compound of hydrogel together with electrical properties can create unique features to be used for myocardial tissue engineering. This research addressed the several types of injectable hydrogels that can be used in myocardial tissue engineering based on the type of their stimulus and various approaches in order to generate electrical properties in hydrogels. Injectable hydrogels have not reached the level to be used clinically in minimally invasive treatments for rebuilding myocardial tissue of the heart, however, hopefully this would be realized in near future, and result in the treatment of the patients and less mortality

کلمات کلیدی:

Injectable hydrogels, Physical cross linking, Cardiac regeneration, Conductive hydrogels, Myocardial tissue engineering

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