عنوان مقاله:

A simple microfluidic platform as a whole cell biosensor to evaluate biologically i nspired nanomaterials

محل انتشار:

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

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خلاصه مقاله:

IntroductionHigh-throughput cell-based screening platforms have stimulated great interest in the pharmaceutical industry for enhanced high-throughput cell-based screening platforms as well as for use in pre-clinical trials. Microfluidic systems were studied for trapping cells with the aim of reducing the well volumes in a standard micro titre plate to speed up the process. Objectives The objective of the research is to develop a novel microfluidic cell trapping micro device for testing Biologically Inspired Nanomaterials with high throughput cell based assay. Methods In this work a simple microfluidic chip design has been developed in which a porous plug of magnetic beads hold the live micro-organisms in chamber whilst the nanoparticles are introduce and the effect is monitored. Results The results revealed trapping living cells into micro chamber of the microfluidic device by using biocompatible magnetic beads. Figure 1 shows fluorescent microscopic image for the trapping of microorganisms into micro chamber of the micro device to investigate the micro screening assay of nanomaterials. Conclusion To sum up, our novel microfluidic chip with cell trapping could be utilized as a blueprint in the biomedical applications for high throughput cell based assay with minimal side effects

کلمات کلیدی:

Microfluidic, Cell trapping, Biologically inspired nanomaterials