HIGH-SPEED DELIVERY OF MICROBEADS IN **MICROCHANNEL USING MAGNETICALLY DRIVEN** MICROTOOL



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What's New ? : On-Chip Single Particle Loading and Dispensing

Abstract: We present on-demand microbeads delivery system in a microfluidic chip by magnetically driven microtool (MMT). The MMT injects the beads mechanically to flow and then into ejection operation part. We succeeded in transferring microbeads one by one with the required pace to the next process to achieve stable dispensing microbeads out from the microchip to incubation environment. The proposed system shows advantages of high-speed, high success ratio and disposable of microfluidic chip having MMT.

Background:





Conclusions/Future work:

On-demand delivery of polystyrene beads in the chip is achieved. This system can be a breakthrough of a high throughput of accurate and effective particle manipulations in the field of cell culturing on a single particle. Single particle loading with required pace by current system with a high success ratio is achieved. • To improve the stabilization and speed of dispensing cytodex or oocytes out from the microchip to incubation environment.



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