传感技术学报
中国微米纳米技术学会
全国高校传感技术研究会 主办

基于微流控芯片的单细胞图像观测系统的设计

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基金项目：

摘　要：

目的：微观检测福尔马林固定单细胞病理实验的固定过程。方法：在恒温条件下，在微流控芯片上培养活体细胞样品，对细胞核DNA进行染色，利用液体静压力驱动和电渗驱动相结合的方式将细胞输送到图像观测位置，注入10%中性福尔马林浸泡，利用荧光显微镜观察细胞固定过程中的形态变化。结果：基于微流控芯片的单细胞图像观测系统的设计认知和总结福尔马林对组织细胞“固定”的作用效果和应用价值。结论：对福尔马林细胞固定作用效果的总结，使工作实践有所借鉴，充实专业内容，进一步提高病理制片质量。

关键词：微流控分析；单细胞图像观测；固定；福尔马林；病理切片

Design of Single Cell Image Observation System Based on Microfluidic Chip

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Abstract:

Objective: Microcosmic detection the pathology experiment of single cell fixed by formalin. Method: Under constant temperature, culturing intravital cell on microfluidic chip, dyes staining DNA of cell nuclear, delivering the cell to observation position by the ways of hydrostatic pressure and electro-osmosis drive, soaked with 10% formalin solution, observing the morphological differentiation of cell fixed process. Result: The single cell image observation system based on microfluidic chip had effect on drawing the conclusion of the effect and the value that the histiocyte was fixed by formalin. Conclusion: As a special process, that drawing the conclusion of the effect and the value that the histiocyte was fixed by formalin had effect on providing reference for practice, increasing content of the profession, and on improving quality of pathological section.

Keywords: microfluidic analysis; single cell image observation; fix; formalin; pathological section.

投稿时间：**2010-04-27**

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