

研究论文

一种基于电洗脱的核酸纯化回收芯片的设计及优化

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摘要 提出了一种基于电洗脱原理的核酸纯化回收芯片, 通过对芯片上电极进行适当的切换操作, 可一次完成核酸样品分离和纯化回收.

同时采用数值模拟的方法对纯化回收芯片管道的几何形状及电场分布进行了优化设计, 并进行了实验验证. 实验结果与模拟分析非常吻合, 证明优化设计达到了预期的效果.

关键词 [核酸](#) [纯化](#) [回收](#) [数值模拟](#)

分类号

## Design and Optimization of a Chip Based on Electroelution for the Purification and Recovery of DNA Fragments

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**Abstract** A chip based on electroelution principle was presented for the recovery of DNA fragments, which can make the isolation and collection of target DNA fragments possible in a single process by switching electrodes. An optimization design was made for the channel structure and the distribution of the electric field in DNA recovery chip, and experiments were also performed to validate the simulation result. Both theoretical analysis and experimental results show that the optimization design in our existing device can achieve the desired results.

**Key words** [nucleic acid](#) [purification](#) [recovery](#) [numerical simulation](#)

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