

研究论文

毛细管电泳微芯片在临床尿蛋白检测中的应用研究

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摘要 用微芯片毛细管电泳法对临床患者尿蛋白进行了分离,初步探讨了用于判断肾损伤的应用前景.以pH 10.3, 75 mmol·L⁻¹的硼酸盐缓冲液作为芯片电泳缓冲体系,利用蛋白质的紫外吸收特性,在210 nm波段检测吸光度并进行信号收集和分析.研究两种添加剂对提高尿蛋白分离效率的影响,分析了肾病综合症、妊娠高血压症、风湿性心脏病和多发性骨髓瘤等患者尿样本,并与美国Helena电泳系统分析结果对比,得到了较一致的结果.

关键词 [毛细管电泳微芯片](#) [紫外检测](#) [临床诊断](#) [尿蛋白](#)

分类号

Capillary Electrophoresis Microchip Assay of Clinical Urinary Proteins

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Abstract The separation and detection of urinary proteins have been conducted by microchip-based capillary electrophoresis (MCE), and application foreground of MCE in clinical diagnosis of various states of disease was discussed. Microchip-based capillary electrophoresis of urinary proteins could offer several advantages over standard urinary protein assay methods such as SDS-PAGE and conventional capillary electrophoresis, including the decrease of sample consumption and analysis time. The microchip used in these studies was designed to realize on-chip separation of urinary proteins with UV detection. The characteristic absorbency near 210 nm of proteins was adopted under the condition: the electrophoretic buffer at 75 mmol·L⁻¹ borate with 0.5 mol·L⁻¹ lactate at pH 10.5. Urine samples from four clinical cases were selected as target for microchip-based urinary protein assays, and the results were consistent with those of commercial Helena Rapid Electrophoreses system.

Key words [capillary electrophoresis microchip](#) [UV detection](#) [clinical diagnosis](#) [urinary protein](#)

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