

研究论文

蛋白质DNA混合微点阵和微流控芯片的整合

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摘要 在活化的石英片上制作蛋白质和DNA微点阵,并可逆地将其与含有通道的多聚二甲基硅氧烷弹性橡胶封接在一起,使蛋白质和DNA微点阵组装在微通道列阵内;实现在微通道列阵内同时检测和分析蛋白质与DNA的功能.为了降低多聚二甲基硅氧烷弹性橡胶的疏水性,增强其生物相容性,实验通过多聚赖氨酸对多聚二甲基硅氧烷弹性橡胶的修饰,提高了它的亲水性,使溶液能够在微通道内顺畅地流通.实验表明,这种混合芯片能够提高检测速度和增加检测的信息量.

关键词 [微点阵](#) [微流控芯片](#) [修饰](#) [多聚赖氨酸](#)

分类号

Microarrays of DNA and Protein Integrated on Microfluidic Chip

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Abstract To combine the advantages of high-throughput microarray and microfluidic chip technology, microarray was fabricated in channels. DNA and protein were arrayed on quartz slide, which was reversibly sealed by poly (dimethylsiloxane) (PDMS) slab containing pattern of channels. The hybridization carried out in channels indicated that target DNA and proteins were bound to their complementary DNA and protein probes specifically. In this method, PDMS conjugated with polylysine was contributed to imparting the wettability and decreasing unspecific adsorption of biomolecules. Our data demonstrated that the integrated chip speeded up the detection compared to microarrays, extended the parallel channels with serial properties and enhanced the throughput of probes and targets.

Key words [microarray](#) [microfluidic chip](#) [modification](#) [polylysine](#)

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