

论文

超亲疏水图案改善阵列芯片质量

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摘要:

本文提出在超疏水表面加工超亲水圆点图案为阵列基底制作免疫蛋白微阵列, 从而减轻“咖啡环效应”, 改善阵列芯片质量.

关键词: 阵列芯片 咖啡环效应 超亲水 超疏水 图案化

Improving Quality of Microarray Chip Based on Superhydrophilic-Superhydrophobic Patterned Surface

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Abstract:

Microarray chip including genechip has been of great application in fields of biology, quarantine, pharmacy and so on. Most of microarray chips were prepared by spotting aqueous droplet on the surface of substrate. Due to "coffee-ring stain effect", there always was a denser perimeter where sample was concentrated during the process of droplet drying after spotting. So the ununiformity of spot caused by "coffee-ring stain effect" was one troublesome problem of the chip quality. Herein, superhydrophilic spot arrays on superhydrophobic AAO surface were fabricated to ease the "coffee-ring stain effect". Furthermore, a protein array is prepared on this patterned surface where immunoreactions are carried out. As a result, spot uniformity is greatly improved in a wide range of concentration and volume.

Keywords: Microarray chip Coffee-ring stain effect Superhydrophilicity Superhydrophobicity Patterning

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