

FISH ON POLYMERS

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FISH (Fluorescent in situ hybridisation) is a widely used diagnostic tool for the detection of chromosomal abnormalities in the genome. Availability of conventional methods using glass surfaces for FISH analysis should ideally be replaced by other fast and cost effective methods. To this end, our present study investigates the substrate compatibility of different polymers [poly methyl methacrylate (PMMA), polycarbonate, cyclic olefin copolymer (COC), and PDMS (polydimethylsiloxane)] to develop a lab on a chip system for FISH analysis. We used slide-sized substrates with all the above mentioned polymers to perform FISH on immobilised cells using random probes.

Our results showed that COC and PDMS were optimal surfaces for a chip based FISH system because of their non autofluorescence properties and PC could not be used for this study because of its high autofluorescence. Although PDMS had excellent optical properties, we could not immobilise the cells on this surface because of its surface properties. This was overcome by increasing the roughness of the PDMS surface. Finally our results were consistent with a previous study [1], which shows PDMS to be a surface of choice for performing lab on a chip FISH analysis.

Reference:

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