Cancer cell adhesion and growth on coated or modified PMMA surface

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Abstract

Poly(methyl methacrylate) (PMMA) is a clear plastic, used as a shatterproof replacement for glass because of good light transparency, resistance to weathering, chemical resistance and so on. In the present study, various kinds of cancer cells were cultured on treated PMMA well-plate. Surface roughness, auto-fluorescence and hydrophilicity of PMMA plates composed of methyl-metacrylate and various additives were analysed to select a PMMA material having profitable characteristics for cell adhesion and fluorescence detection. And then, PMMA plates were modified by oxygen plasma, poly-L-lysine and collagen which help to increase hydrophilicity or positive surface charge for cell attachment to PMMA surface. The plates with the surface-modified PMMA wells were then incubated with HT-29, SK-MEL-2, SN12C, MCF-7 and NIH : OVCAR-2 which were selected from NCI-60 cell lines. The modified PMMA surface provides good seeding efficiency and cell growth with a good adhesion. This PMMA plate is useful for applications in the area of cell-based chip.

Reference

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