

Material-independent Surface Modification for Promotion of Cell Adhesion

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Candidates for materials applied in the biomedical and tissue engineering fields are very limited due to the several reasons. One of them is promoting cell attachment by changing the surface chemistry of materials. The adhesion of cells is significant first step to promote various intercellular signal cascades that leads to cell proliferation migration, differentiation and apoptosis. Therefore, simple and purpose-fit method of surface modification has been explored. Having flexibility in substrates and giving room for post modification with biomolecules, polymer coating is especially being spotlighted. In this study, versatile surface modification system for tissue engineering application has been developed. The instant adhesion of cells was observed on the modified substrates by simply deep-coating method. Cytotoxicity assay and proliferation assay was also performed to ensure the condition of cells. Also, simple patterning system has been developed in macro-scale and micro-scale. Overall, we confirmed that the cell adhesion is boosted on modified substrates and additionally developed facile patterning system.