

## Lithographic Application of a Novel Photoresist for Patterning of Cells

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In this study, a simple lithographic process in conjunction with a novel biocompatible nonchemically amplified photoresist material was successfully used for cell patterning. A novel copolymer of DOBEMA and GMA, poly(DOBEMA<sub>0.84</sub>-co-GMA<sub>0.16</sub>), the nonchemically amplified resist material was used in this study. GMA was incorporated in the polymer to avoid peeling off of the resist film from the glass substrate. UV light irradiation on selected regions of the nonchemically amplified resist film rendered the exposed regions hydrophilic by the formation of carboxylic groups. It was found that mouse fibroblast cells were preferentially aligned and proliferated on the UV light exposed regions of the nonchemically amplified resist film where carboxylic groups were present. The cell alignment on the exposed regions was maintained during cell proliferation. This simple strategy of generating carboxylic groups on the UV light exposed regions by the simplified lithographic process opens up the possibility of immobilizing various biomolecules such as DNA, proteins, and cells. [This work was supported by Medigenes Co., Ltd. and by the Brain Korea 21 Project. Further support through the LG Chemicals Chair Professorship is appreciated.]