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[\[PDF \(556K\)\]](#) [\[References\]](#)**Cell Adhesion and Proliferation Patterns on Mixed Self-assembled Monolayers Carrying Various Ratios of Hydroxyl and Methyl Groups**[Yoshihiko FUSE](#)¹⁾, [Isao HIRATA](#)²⁾, [Hidemi KURIHARA](#)¹⁾ and [Masayuki OKAZAKI](#)²⁾

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Abstract:

Mixed self-assembled monolayers (SAMs) with hydroxyl and methyl surface groups were prepared as biomaterial surface models which were well-controlled and well-defined. The surface properties of mixed SAMs were examined by X-ray photo-electron spectroscopy and water contact angle measurement. It was found that the parameter of water contact angle more accurately reflected the surface compositions of mixed SAMs than by the mixing ratio of the two alkanethiols. Cell adhesion and growth were also examined on mixed SAMs of various wettability conditions. It was found that amount of serum protein adsorption changed with the surface composition. To examine the effect of surface composition on cell growth pattern, four cell types—C3H10T1/2-clone 8, L929, UVB6-2.1A, and MC3T3E1—were incubated on mixed SAMs for three or six days. Differences in cell growth pattern against wettability were clearly recognized for each cell type. In light of the results obtained in this study, the relationship between the biocompatibility of biomaterials and surface factors were thus clarified.

Key words:[Self-assembled monolayers](#), [Surface composition](#), [Cell adhesion and proliferation](#)



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