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[\[PDF \(225K\)\]](#) [\[References\]](#)**Gene Expression of MC3T3-E1 Cells on Fibronectin-immobilized Titanium Using Tresyl Chloride Activation Technique**[Kamolpan PUGDEE^{1\)}](#), [Yasuko SHIBATA^{1\)4\)}](#), [Nobuyuki YAMAMICHI^{1\)}](#), [Haruhiko TSUTSUMI^{1\)}](#), [Masao YOSHINARI^{2\)}](#), [Yoshimitsu ABIKO^{1\)4\)}](#) and [Tohru HAYAKAWA^{3\)4\)}](#)

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Abstract:

Fibronectin (FN) can be immobilized directly on titanium surfaces using tresyl chloride activation technique. The key advantage of tresyl chloride activation technique lies in its simplicity. In this study, we examined the cell attachment and gene expression of MC3T3-E1 cells on FN-immobilized titanium using GeneChip. Cells attached on FN-immobilized titanium at a higher rate than untreated titanium. FN altered the gene expression profile, whereby 62 genes were found to be up-regulated, while 56 genes were found to down-regulate to over twice the level on day 14. FN not only enhanced the expression levels of IBSP and OMD, but also decreased SULF1 mRNA level. Taken together, the immobilization of FN on tresylated titanium promoted early matrix mineralization and bone formation.

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