A-18 Extracellular matrix regulates gene expression of PCNA and p53 in cultured pharyngeal cancer cells

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I. Aim. Extracellular matrix (ECM) components have been known to regulate the gene expression in many cells. To examine the molecular mechanisms of this regulation, we performed the present study.

II. Materials and Methods. Protein expression and intracellular localization of PCNA and p53 were examined in pharyngeal cancer cell lines, FaDu and Detroit 562, cultured in polystyrene culture dishes, on type I collagen gel, or on basement membrane component gel (Matrigel) by immuno-fluorescence and immunoblotting. Cell proliferation was assayed by 5-bromo-2'-deoxyuridine (BrdU). The effects of dexamethasone (Dex), all-trans-retinoic acid, l-ascorbic acid 2-phosphate, or phorbol 12-myristate 13-acetate (PMA) on PCNA and p53 expression were examined.

III. Results. The cells were grown as a monolayer on polystyrene, while they formed multiple cell layers on type I collagen gel or three-dimensionally developed cellular network on Matrigel. Expression and intracellular distribution of PCNA and p53 proteins in both cell lines were different from the basal to top layer of the multiple cell layers on type I collagen gel, or between the cells located on the surface and interior of cell aggregates on Matrigel. Dex and PMA repressed cell proliferation, as shown by BrdU incorporation assay, while induced nuclear p53 expression.

IV. Discussion. These results indicate that PCNA and p53 expression, and their intracellular localization in pharyngeal cancer cells were regulated in depending upon proliferative state and by ECM components.

β1 integrins mediate migration and adhesion of hepatoma cells to basement membrane proteins
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