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Interation of THP-1 Cells with Fibronectin Enhances PMA-Induced Differentiation

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Differentiation of human monocytic leukemia cells, THP-1, upon activation of protein kinase C(PKC) with PMA requires adhesion of cells to culture dish. THP-1 cells adhere to FN via integrin $\alpha_5\beta_1$ and then spread in the absence of PKC activation. We, therefore, examined whether adhesion of THP-1 to FN promotes PMA-induced differentiation of the cells. THP-1 cells did not differentiate into macrophages when cells adhere to FN in the absence of PMA. Also the PKC activity of THP-1 cells did not change during adhesion and spreading stage. In addition, bisindolylmaleimide or H-7, a specific PKC inhibitor, did not block adhesion of THP-1 to FN. And lysosomal acid phosphatase (AP) activity also did not change during adhesion of THP-1 cells to FN. These indicate that adhesion of THP-1 cells to FN is not enough to induce differentiation of cells. In addition, spreaded THP-1 cells were round up within several hours and detached from FN. On the other hand, during differentiation of THP-1 cells with PMA, the lysosomal AP activity was enhanced when cells plated to FN coated dish. These data indicate that interaction of cells with FN through integrin $\alpha_5\beta_1$ enhances PMA-induced differentiation of THP-1 cells to macrophage, and that down regulation of integrin $\alpha_5\beta_1$ may participate in detachment of THP-1 cells to FN.

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The Function of Ly6 Antigen in Cytotoxic T Lymphocyte Activation

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To study the function of Ly6 molecule in antigen recognition by cytotoxic T lymphocyte (CTL), the expression of Ly6 on P815 target cells was inhibited by transfecting antisense Ly6 RNA expression vector. After initial selection with G418, clones were analyzed by Southern blot analysis and by fluorocytometry for Ly6 expression. Representative clones analyzed contained the transfected gene, and some of the clones (24 out of 144 G418 resistant clones) were significantly inhibited in Ly6 expression. These clones failed to give full signal for the proliferation of C57BL/6 spleen cells and 2C CTL clone in mixed leukocyte culture (MLC). Following the MLC, the effects of Ly6 expression on the T lymphocyte subpopulations in terms of CD4 and CD8 have been investigated. The Ly6 suppressed clones failed to stimulate CD8 positive cells, but not CD4 positive cells. These results suggest that Ly6 molecule is indispenasable for allogeneic MHC antigen recognition by CTL. The susceptibility test to CTL with Ly6 suppressed clones is in progress.