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CELLULAR IMMUNE RESPONSES AGAINST MELANOMA CELLS.

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Malignant melanoma is an important model for the study of cellular immune responses against cancer cells. We have isolated lymphocytes of normal donors in distinct fractions by centrifugal elutriation. Two fractions, small lymphocytes (SL) and large lymphocytes (LL), were found to differ in cytolytic activity against melanoma and other tumor cells. The LL appear to be more cytotoxic and this cytotoxicity can be enhanced by culturing with IL-2, whereas SL could hardly be stimulated by IL-2.

Cytotoxic T lymphocyte (CTL) clones can be derived from peripheral blood of melanoma patients by a mixed lymphocyte/tumor culture with irradiated autologous tumor cells and cloning in the presence of IL-2. The cytotoxic activity of these clones could be blocked by two monoclonal antibodies NKI-M6 and NKI-M7, produced in our laboratory. Biochemical analysis showed that NKI-M6 recognizes a proteoglycan consisting of a chondroitin sulfate component with a MW of 450 kD and a core protein of 250 kD. NKI-M7 recognizes the vitronectin receptor, a structure belonging to the integrin family that is involved in adhesion processes.

Recently we have obtained another series of T cell clones that are cytolytic to autologous melanoma cells after culturing with rIL-4 instead of rIL-2. It appeared that clones cultured with rIL-4 preferentially kill autologous melanoma cells as compared to K562, whereas clones cultured with rIL-2 kill K562 as well as autologous melanoma cells.

Analysis of the reactivity of the clones cultured in vitro may contribute to the knowledge of immunologically important structures on melanoma cells.

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