

## Antigens on the Surface of Vitiligo Melanocytes

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The goal of this study, which was a sub-project of the project "Immunologic, Morphologic and Growth Characterization of Melanocytes from Patients with Vitiligo", was to assess the changes in antigen profiles of normal melanocytes in culture at different passages and to compare the antigen expression on normal and vitiligo melanocytes. Antigens are proteins located on the surfaces of all living cells. These antigens are specified for each type of cell and is characteristic for each type of cell.

The purpose of the study was to determine whether there was a difference in the antigenic profile of the vitiligo melanocytes and the normal melanocyte. This would tell us why the immune system recognizes the melanocytes in vitiligo patients as abnormal and destroys them.

WORK DONE: Several lines of normal melanocytes were generated. Skin biopsy samples from vitiligo patients were also obtained and specialized growth media adopted for the growth of vitiligo melanocytes. Vitiligo melanocytes were analyzed in the primary state. Surface antigens assessed on all melanocytes were ME>-1, MEL-5 and adhesion molecule ICAM- 1.

Of the normal melanocytes, it was found that greater than 85% of melanocytes in the primary culture expressed MEL-1, MEL3 and ICAM-1 antigens. MEL-1 was significantly reduced on the cells after the first passage and in succeeding passages. MEL-5 and ICAM-1 was not significantly reduced after the first passage but was in succeeding passages.

When normal melanocytes of primary culture were compared with vitiligo melanocytes of primary culture, it was found that there was no significant difference between the percentage of cells expressing MEL-1 (85% normal, 86% vitiligo), MEL-5 (90% normal, 81% vitiligo), ICAM-1 (90% normal, 86% vitiligo).

Since the laboratory evidence suggests similar antigen profiles in normal and vitiligo melanocytes, and there is ample evidence of the response by the immune system in vitiligo patients against melanocyte antigens, it is our goal to identify the cells in the body that respond to the melanocyte antigens. By stimulating lymphocytes (white blood cells) from vitiligo patients with melanocytes in the lab, we can cause the lymphocytes to divide and express surface molecules which can be identified. The lymphocytes (white blood cells) cells will be isolated from the blood of vitiligo patients. Normal melanocytes will be then used to stimulate the vitiligo patients' lymphocytes. It has been shown that these lymphocytes are present in the skin affected by Vitiligo when the disease first starts. We now want to see how they are stimulated by the melanocytes and how they eventually destroy the melanocytes. This will enable us to, hopefully, be able to stop the destruction of melanocytes in vitiligo by the lymphocytes.

Thus, the currently submitted proposal (In Vitro Activation of Lymphocytes Involved in the Production of Auto-antibodies To Pigment Cell Antigens In Vitiligo Patients) is a spin-off study on what we have found from the previous study (Immunologic, Morphologic and Growth Characterization of Melanocytes from Patients with Vitiligo).