

Serum Auto-Antibodies in the Avian Model for Vitiligo

Raymond Boissy, Ph.D.
*Associate Professor, Department of Dermatology
University of Cincinnati Medical Center*

In the avian model for vitiligo, the Smyth Chicken, birds produce melanocyte specific serum auto-antibodies only during the active stages of the depigmentary process. Before the development of vitiligo, and on occasions when repigmentation spontaneously occurs, these serum auto-antibodies are not expressed. The major antigen recognized by these serum antibodies is a glycoprotein of 75 kDa in molecular weight. It has been demonstrated in other laboratories that human vitiligo patients may also express serum auto-antibodies to a 75 kDa melanocyte protein. We are in the process of verifying whether the human homologue of TRP-1 (i.e., gp57) is recognized by serum in vitiligo patients and how it induced an auto-antibody response. It is also of importance to ascertain the function of this TRP-1 molecule and to determine how it is involved with pigment synthesis in the melanocyte. We immunopurified TRP-1 from human melanocytes and demonstrated that it exhibits tyrosine hydroxylase activity when the concentration of the tyrosine substrate is low. It is possible that TRP-1 may be important in initialing efficient pigment synthesis.