

# Analysis Of Apoptosis in Melanocytes Cultured From Vitiligo Patients

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

For the past several months our laboratory has been continuing our research studies directed at determining why pigment cells die after exposure to phenolic/catecholic agents, chemicals that may cause contact/occupational Vitiligo. We have begun to look at molecules that are generally used by all cells to protect them from various types of assault that could traumatize the cell and push it to undergo cell death. These molecules have been given scientific names like Bcl-2, Bax, Bad, etc. Some of these molecules protect the cell from death whereas others actually promote cell death. We wanted to know which of these molecules the melanocytes would make or not make in response to exposure to phenolic/catecholic agents (specifically 4-tertiary butylphenol = 4TBP). We added to cultures of skin-derived melanocytes various dosages of 4TBP for various times, and then determined the amount of these molecules within the melanocytes. The only molecule that was effected after exposure to 4TBP was one called Bcl-2. This molecule generally protects the cell and allows it to survive when traumatized. What happened to the melanocytes exposed to 4TBP was that the amount of the protective Bcl-2 molecule was dramatically reduced. This change in Bcl-2 would make the melanocyte vulnerable to destruction. Therefore, this study suggests that changing the amount of Bcl-2 in a melanocytes may be one reason the pigment cell dies resulting in vitiligo. Our research now needs to confirm whether changes in the amount of the protective molecule Bcl-2 really plays any part in developing vitiligo.