A010 LPSC

Study Of The Reaction Conditions Affecting The Physic-Chemical Properties Of Melanins

Abstract:
The research is part of ongoing studies on the synthesis of melanins and the parameters that affect their physic-chemical properties, particularly the color. Melanins can be generated from a variety of precursors. In our studies we used catechol, pyrogallol, dopamine or L-DOPA as precursors for melanin synthesis. Salts (NaCl or KCl) had been observed to affect the physic-chemical properties of synthesized melanins. Therefor the effect of salts on the melanogenesis reaction was studied. The reactions were monitored using UV-Vis spectroscopy and RP-HPLC analyses. Using all four different precursors and different concentrations of NaCl or KCl (0 -250mM) it was observed that the salts did not affect the outcomes of the melanogenesis reactions. Separate previous studies had suggested that the presence of amino acids affected the outcomes of the melanogenesis reaction. These early results were confirmed and expanded. In general, the presence of amino acids appeared to generate darker melanins, particularly in the presence of methionine. In addition, it was observed that the presence of the amino acids slowed the kinetics of the reaction. These observations are being addressed in a more systematic fashion.