A Chemist View of Melanogenesis

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The subject of melanin and melanogenesis has been a fascinating one for chemists. Landmarks in the chemistry of melanogenesis have been made as early as 1886 by G. Bertrand's identification of tyrosine as a melanin precursor. However, currently there are still no real insights on the chemical aspects.

Pigmentation of hair, skin, and eyes in animals is mainly a manifestation of the presence of melanin. Melanin is synthesized in melanocyte cells. Melanocytes in mammals and birds produce two chemically distinct types of melanin, Eumelanin and Pheomelanin. The molecular structure of melanin, the mechanism by which the pigment is produced, and how the pigment is organized within the melanosome remains to be fully understood. This ChemSem presentation aims to discuss the current understanding of the initial chemical steps in melanogenesis.

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