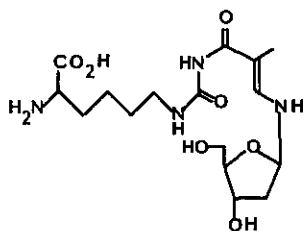


CHEMISTRY OF NUCLEOSIDE-AMINO ACID ADDUCTS AND ITS RELEVANCE
TO PHOTOINDUCED LESIONS

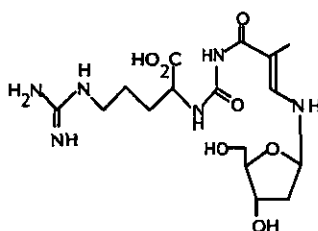
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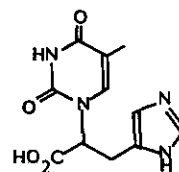
Photobiologists are intrigued by the possibility that the formation of DNA-protein adduct is an important mode of UV-induced damage in biological systems. Molecular biologists are examining the feasibility of using UV-cross-linking as a means of determining contact points in nucleic acid-protein complexes. Organic photochemists are exploring the structures and the mechanism of the adduct formation. Despite many approaches, very little is known about the chemistry of covalently linked DNA-protein adducts. We investigated a number of relevant model systems and have succeeded to characterize several important nucleoside-amino acid adducts formed in UV-irradiation of pyrimidine or purine nucleosides with amino acids in aqueous solutions. Some of these are shown below.



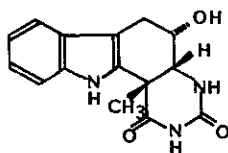
(Thd and Lys, 0 °C)



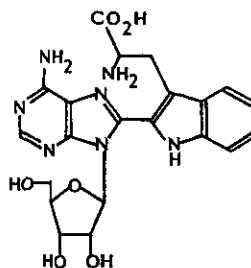
(Thd and Arg, 0 °C)



(Thd and His)



(Thy and Trp)



(8-Br-Ado and Trp)

Chemistry and the mechanism of the adduct formation as well as its characterization in UV-irradiated DNA-histone complexes will be discussed.