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Influence of Conformational Dynamics on the Exciton States of DNA

Various photoreactions occurring upon absorption of UV irradiation by the DNA bases (adenine, cytosine, guanine and thymine) are known to have lethal or mutagenic effects on cells. The yield of such photoreactions may be enhanced if they are preceded by a transport of electronic excitation within the double helix. The classical view, dating from the sixties, that photons are absorbed by single bases, guided subsequent photophysical and photochemical investigations involving DNA. Progress in experimental and theoretical methods over past few decades incites a re-examination of these processes.