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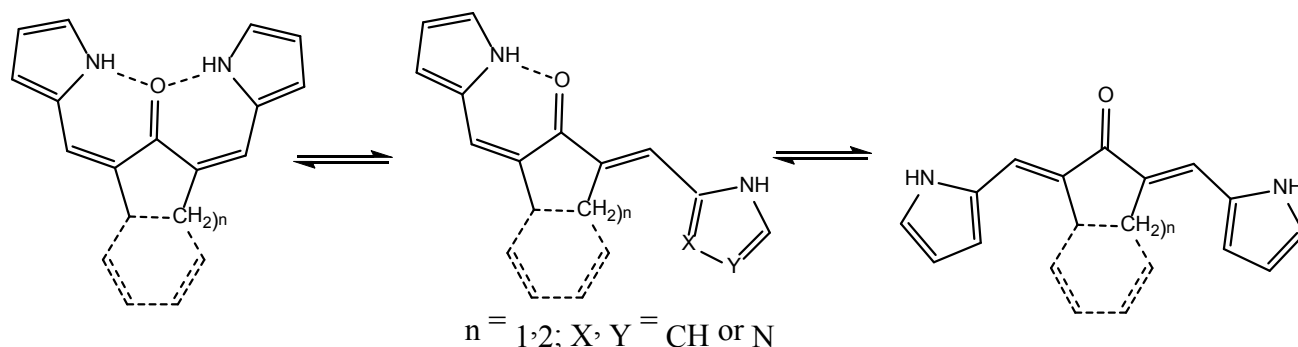
# Pharmaceutical Chemistry

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## Structure, intermolecular and photo-induced intra-molecular hydrogen bonding in 2-azolylmethylidene cycloalkanones

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Nowadays, the chemistry of bis(aryl)methylidene derivatives of cyclic ketones, due to their vast field of application and availability is an extensively growing area. These compounds have a broad spectrum of biological activity. On the other hand, their heterocyclic analogs are undeservedly ignored in the literature. The present contribution reports the results of the synthesis, X-ray and NMR studies supported by DFT calculations of the structure of 2,5(6)-bis((azolyl)methylidene)-cycloalkanones. Their structure in solid state and solution strongly depends on the ability to form intra- and intermolecular hydrogen bond N-H...O=C and CH...N. In the case of cyclopentanone and cyclohexanone dienones the most stable configuration is E, E, which under UV irradiation undergoes isomerization around the double bonds with the formation of the Z,E and Z,Z-isomers, containing intramolecular hydrogen bonds. Unlike that, the bis(pyrrolyl)methylidene derivative of 2-indanone exists exclusively in the stable Z,Z-configuration, whereas its bis(imidazolyl) analogs exhibit an easy isomerization and photoisomerization in polar solvents.



### Biography

Mark Sigalov has completed his PhD in Chemistry in 1980 from Irkutsk University, USSR and become Doctor Habilitatis in 1994. He is a Senior Researcher at Department of Chemistry, Ben-Gurion University, Israel. He has published more than 150 papers in reputed journals.

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