

International Workshop on Photochemistry of Organic Molecules  
dedicated to the 85-th anniversary of academician G.P. Gurinovich

September 18-20, 2018  
Minsk, BELARUS

## On the Shift of Equilibrium Between the Free Base Corroles and Their Deprotonated Forms in Solution

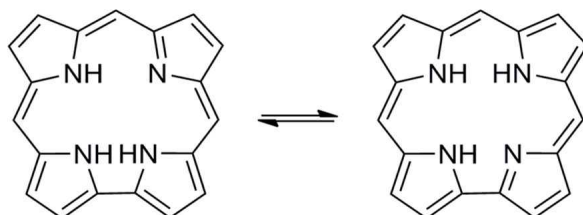
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Corroles constitute the family of tetrapyrrolic macrocycles, differing from regular porphyrins by the absence of one *meso*-carbon atom, resulting in direct bridging of two neighbouring pyrrole rings via a C<sub>a</sub>-C<sub>a</sub> linkage. Such structural change promotes substantial reorganization in the electronic structure to fulfil the macrocycle's aromaticity requirements. The free base corrole macrocycle consists of three pyrroles and one pyrrolenene ring. There is not enough space for three pyrrolic hydrogens to allow the planar conformation of the macrocycle and steric repulsion induces the formation of a nonplanar macrocycle conformation. The asymmetry of the macrocycle and the presence of three protons in its core provide the basis for the formation of non-equivalent NH-tautomers, whose electronic structures differ noticeably. Thus, all properties of free base corroles must be considered taking into account that free base corroles inherently exist as mixture of NH-tautomers with a nonplanar macrocycle.



We report the summary of our results which indicate that spectral-luminescent and physico-chemical properties of the free base corroles need to be considered taking into account the inherent macrocycle nonplanarity and the formation of NH-tautomers [1-4]. The easy shift of the equilibrium between the free base and deprotonated forms in solution was proposed to explain on the same basis.

### REFERENCES

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