

# Derivatives of 1,3-Diketones and 1,2-Oxazoles as Versatile Synthons and Precursors of Biomolecules

Feodor A. Lakhvich

*Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus*

*Cuprevicha 5/2, 220141 Minsk, Republic of Belarus;*

*Fax: (017)239316, E-mail: lakhvich@presidium.bas-net.by*

Rich synthetic potential of 1,3-dicarbonyl compounds (1,3-DCC) (**2**) is due to variety of chemical reactions with participation of ketonemethylene (polyketide) fragment. Selectivity of incorporation of different reaction centres of 1,3-DCC into synthetic reactions is ensured by the use of their enolic form derivatives (vinilogenous ethers, anhydrides, amides (**3**)). One of the most effective way for 1,3-DCC synthetic potential broadening consists in the use of their latent forms - 1,2-oxazoles (isoxazoles). Easy formation of isoxazole cycle during reaction of 1,3-DCC with hydroxylamine, stability of the hetero cycle in different reaction conditions and possibility of 1,3-difunctionality regeneration assures the effectiveness of the use of isoxazole derivatives in many-stage synthetic schemes. Nitrile oxide synthesis of isoxazoles and 2-isoxazolines (**1**, **5**) followed by heterocycle cleavage into 1,3-DCC or close difunctionality (**4**) are of the special significance. In principal, it does not require the presence of initial carbonyl containing compounds.

Different variants of mutual chemical transformations of 1,3-DCC and isoxazole derivatives are depicted in the scheme. From this point of view the methodology for the use of 1,3-DCC as well as isoxazoles derivatives in the schemes of the total synthesis of prostanoids, kairomones, defensive compounds of insects, acylresorcinols and other biomolecules of polyketide and another origin is discussed in the report.

