

O. Lozinski, PhD,
T. Shokol, PhD, shokol_tv@univ.kiev.ua,
N. Gorbulyenko, PhD,
V. Khilya, Dr. Sci., Corresponding Member of the NAS of Ukraine
Taras Shevchenko National University of Kyiv, Kyiv

A NOVEL METHOD OF SYNTHESIS OF THE 4*H*,10*H*-PYRANO[2,3-*f*]CHROMEN-4,10-DIONE SYSTEM

*A simple and efficient method for the synthesis of 4*H*,10*H*-pyrano[2,3-*f*]chromen-4,10-dione system, which is characterized by rather high yields on relatively mild conditions was offered. Design of that system has been carried out by annelation of γ -pyrone cycle to chromone core. 4*H*,10*H*-Pyrano[2,3-*f*]chromen-4,10-dione system was elaborated using 8-(3-dimethylamino-2-propenoyl)-7-hydroxy-4*H*-chromen-4-one cyclization in acetic acid. The starting enaminoketone derivative was synthesized in two stages from 7-acetoxychromone. 3-(4-Chlorophenyl)-6-ethyl-2-methyl-4-oxo-4*H*-7-chromenyl acetate was converted into 8-acetyl-3-(4-chlorophenyl)-6-ethyl-7-hydroxy-2-methyl-4*H*-4-chromenone by Fricke rearrangement. Subsequent heating of the latter with *N,N*-dimethylformamide dimethyl acetal in toluene gave the desired 3-(4-chlorophenyl)-8-(3-dimethylamino-2-propenoyl)-6-ethyl-7-hydroxy-4*H*-chromen-4-one. The advantage of such approach is the ability to obtain biopotent systems with different substituents in pyrone cycles, that will contribute to the search for new biologically active compounds. The structures of synthesized compounds have been assigned on the basis of analytical and spectra data.*

Key words: 8-acetyl-7-hydroxychromones, 8-(3-dimethylamino-2-propenoyl)-7-hydroxychromones, *N,N*-dimethylformamide dimethyl acetal, 4*H*,10*H*pyrano[2,3-*f*]chromen-4,10-diones.