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# Synthesis of Quinolin-4-one Derivatives Containing an Azoles Nucleus as Potential Anti-Inflammatory Agents

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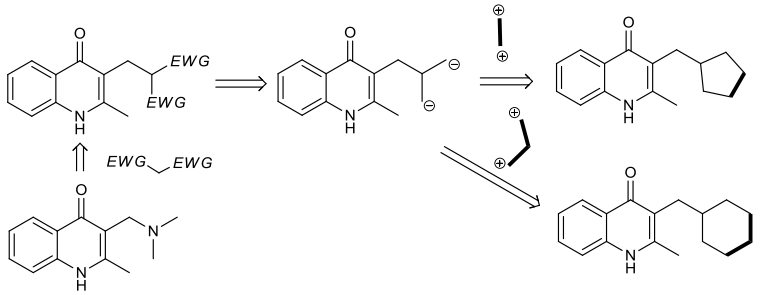
Previously it has been shown that 3-dimethylaminomethyl-2-methyl-1,4-dihydroquinoline-4-ones can act as alkylating agents in the reaction with methylene active compounds [1,2]. This chemical reactivity opens more opportunities in using the "2 + 3" and "3 + 3" strategies in synthesis of new heterocycles - derivatives of quinolin-4-ones (Scheme 1).

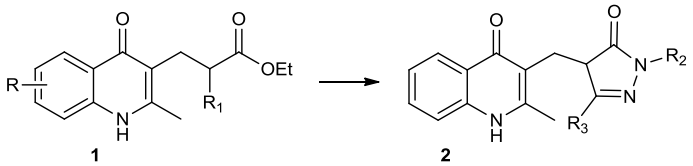
Scheme 1




To provide a preliminary assessment of the pharmacological potential of new quinolone scaffolds, determination of 2D molecular similarity of synthesized compounds with the biologically active structures in the ChemBl_20 database, using ChemAxon software was conducted. Virtual screening has shown that the quinolin-4-one derivatives containing an azoles nucleus would be potential leads in finding and developing of new NSAIDs.

Systematic libraries of new derivatives of 2-methyl-3-[(5-oxo-4,5-dihydro-1H-pyrazol-4-yl) methyl]-1,4-dihydroquinolin-4-ones **2** have been obtained by condensation of alkylated active methylene compounds **1** with arylhydrazines and hydrazine hydrate under base catalysis with high yields (Scheme 2).

Scheme 2




**1** **2**

$R_1$ = CN; $COCH_3$ $R_2$ = H; Ar $R_3$ = $NH_2$; $CH_3$

[1]. Zubkov V. O. et al. Journal of Organic and Pharmaceutical Chemistry, 2011, Vol. 9, No.4, pp.38-41.
[2]. V.O.Zubkov et al. Journal of Organic and Pharmaceutical Chemistry. 2015, Vol. 13, Iss. 1 (49), pp.32-36.p