Title: Synthesis of fused dipyranocoumarins and pyridopyranocoumarins. Biological evalution of the products.

Evangelia-Eirini Vlachou[a], Ioannis Fotopoulos[b], Dimitra Hadjipavlou-Litina[b], Konstantinos Litinas[a]

[a] *Laboratory of Organic Chemistry, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*
[b]*Department of Pharmaceutical Chemistry, School of Pharmacy, Aristotle University of Thessaloniki, Thessaloniki, 54124, Greece*

Dipetalolactone and 4-methyldipetalolactone are prepared in excellent yield by a one-pot tandem propargylation/Claisen rearrangement/cyclization reaction of the corresponding 5,7-dihydroxycoumarins with 3-chloro-3-methylbut-1-yne in the presence of Cs_2CO_3 under microwave irradiation. The analogous reactions of propargyl chloride with esculetins or 5,7-dihydroxy-coumarins led to dipropargyloxy derivatives. The later by treatment with gold nanoparticles supported on TiO_2 or $BF_3.Et_2O$ in DMF, under microwave irradiation resulted in very good to excellent yield to the corresponding fused dipyranocoumarins. The reactions of esculetins with 3-chloro-3-methylbut-1-yne gave mainly exo-methylene fused dioxino[g]coumarins.

The reactions of 6-amino-7-hydroxycoumarins and 7-amino-6-hydroxycoumarins with propargyl bromide and 3-chloro-3-methylbut-1-yne in the presence of Cs_2CO_3 under microwave irradiation led to dipropargyl derivatives. The latter by treatment with gold nanoparticles supported on TiO_2 or $BF_3.Et_2O$ in DMF, under microwave irradiation resulted to the corresponding fused pyrido-pyranocoumarins.

The new compounds were tested *in vitro* for their antioxidant and antiinflammatory activities.

Biography

E.-E. Vlachou has completed her MSc at the age of 25 years from Aristotle University, Department of Chemistry, in Organic Synthesis. Now she continues her studies as a PhD student at the same field. She has participated in many conferences and she has published two papers in Journal of Heterocyclic Chemistry and in Bioorganic Chemistry until now.

Presenting author details

Full name: Evangelia-Eirini Vlachou
Contact number: +30 2310997864
Twitter account:
Linked In account: linkedin.com/in/eva-vlachou
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