

عنوان مقاله:

Synthesis and Purification of γ -Prenyloxycoumarins and Herniarin as Bioactive Natural Coumarins

محل انتشار:

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خلاصه مقاله:

Objective(s) γ -prenyloxycoumarins including γ -isopentenylloxycoumarin, auraptene and umbelliprenin, and herniarin have been widely recognized as bioactive coumarins. This paper presents the ways to synthesis these compounds. Materials and Methods γ -prenyloxycoumarins were synthesized by reaction between γ -hydroxycoumarin (1 M) and relevant prenyl bromides (1.5 M) in acetone at room temperature. The reaction was carried out in the presence of DBU (1, 8-diazabicyclo [5.4.0] undec- γ -ene) (2 M). After 24 hr, the mixture was concentrated under reduced pressure. The compounds were purified by column chromatography. Results Three bioactive γ -prenyloxycoumarins, namely, umbelliprenin, auraptene and γ -isopentenylloxycoumarin, together with herniarin were synthesized from γ -hydroxycoumarin under alkaline conditions (DBU) and then purified by column chromatography. The structures of the products were characterized by NMR spectroscopic method including ^1H - and ^{13}C -NMR experiments. Conclusion The method of synthesis for γ -prenyloxycoumarins and herniarin which is presented here has not been reported yet. Moreover, for the first time, umbelliprenin was chemically prepared in this work.

کلمات کلیدی:

Auraptene, Herniarin, γ - Isopentenylloxycoumarin, γ -Prenyloxycoumarins, Synthesis, Umbelliprenin

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