

Synthesis of New Phosphorus-containing Derivatives of Grossgemine

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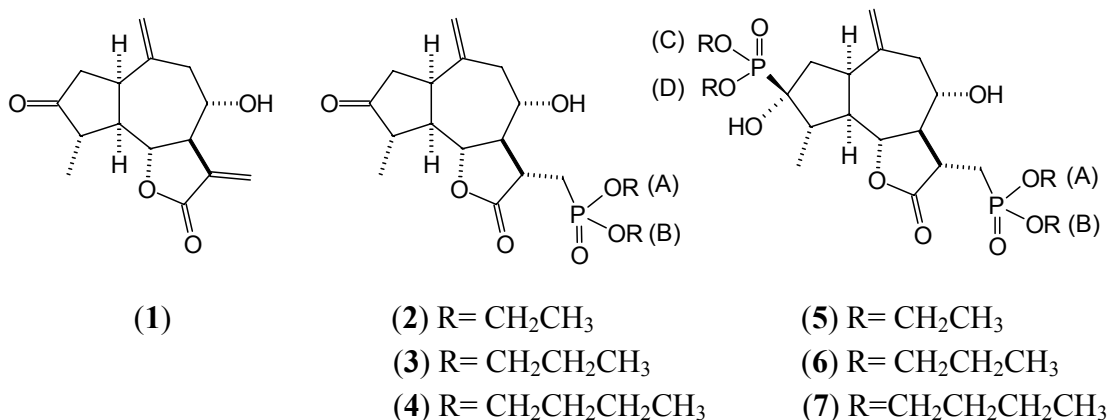
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To extend the researches on chemical modification of sesquiterpene lactones with the introduction of phosphorus-containing functional groups [1, 2] based on the guaianolide grossgemine (**1**) to their molecules, we've obtained new derivatives: monodialkylphosphonates (**2-4**) and bisdialkylphosphonates (**5-7**), whose structures were elucidated using NMR ¹H, ¹³C, ³¹P spectroscopy, two-dimensional NMR ¹H-¹H (COSY) spectroscopy and also computation methods.



It is interesting to note that the reagent had first attacked the exomethylene lactone chain of grossgemine's molecule, not the keto-group, because, according to the previously published kinetics studies of Pudovick reaction in cinnamic acids and other compounds, the reaction rate of ketones phosphorylation is much higher as compared to the similar reactions with the participation of C=C bond coupled with the esteric group [3].

Ref.

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