

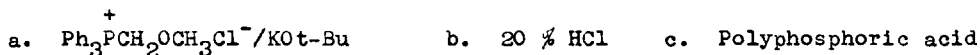
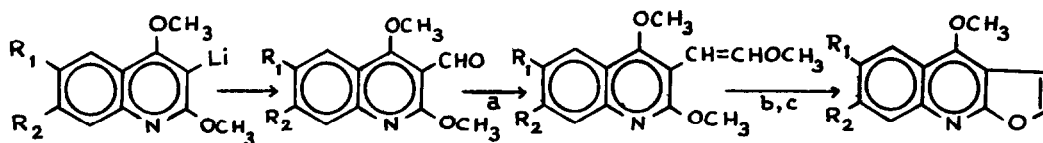
NEW SYNTHESSES OF THE FUROQUINOLINE ALKALOIDS AND SOME
OXYGEN HETEROCYCLIC COMPOUNDS

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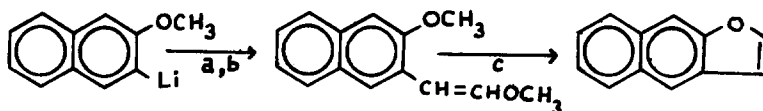
Five general methods¹⁻⁵ are available for the synthesis of the furoquinoline alkaloids. Of these the last four involve dehydrogenation at the last stage, which does not proceed in reproducibly good yields. We describe below a new synthesis which obviates the last step. Thus, for example, for the synthesis of dictamnine ($R_1 = R_2 = H$), 2,4 dimethoxy quinoline was lithiated at 3 position and a formyl group introduced by treatment of the organometallic compound with N-methyl formanilide. Further reaction with methoxymethylenetriphenylphosphorane gave a mixture of enol ethers, which was hydrolysed and cyclised to give the alkaloid, identical with authentic sample. The overall yield in the reaction was very satisfactory.



The combination of lithiation and Wittig reactions was also extended to the syntheses of pteleine ($R_1 = OCH_3, R_2 = H$) and evolitrine ($R_1 = H, R_2 = OCH_3$). It also furnished, in excellent yields, by methods indicated below, several heterocyclic compounds like the linear naphthofuran, linear naphthocoumarin and oxaphenalene, which are not readily synthesised by

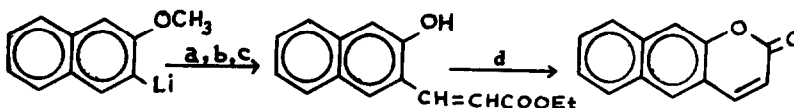
acid catalysed methods.

Linear naphthofuran



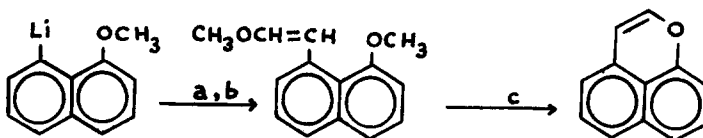
- a. PhN(CH₃) CHO b. Ph₃P⁺CH₂OCH₃Cl⁻/KOt-Bu c. Pyridine.HCl

Linear naphthocoumarin



- a. PhN(CH₃) CHO b. AlCl₃ c. Ph₃P = CHCOOEt d. Heat

Oxaphenylene



- a. PhN(CH₃) CHO b. Ph₃P⁺CH₂OCH₃Cl⁻/KOt-Bu c. Pyridine.HCl

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