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## SYNOPSIS

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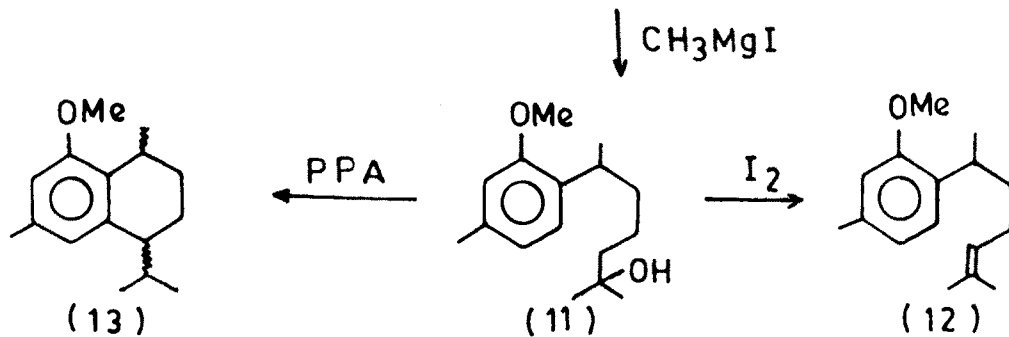
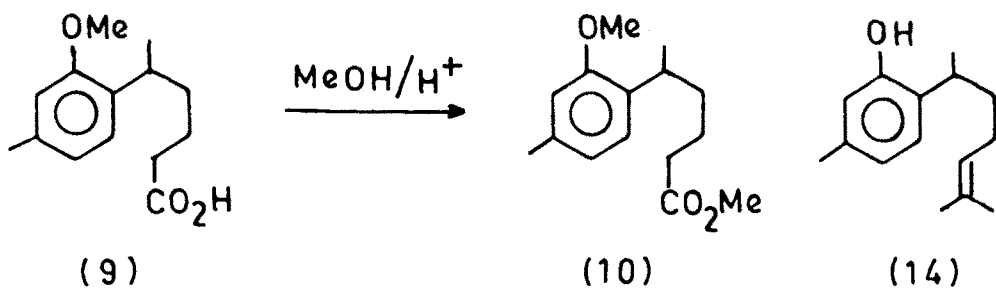
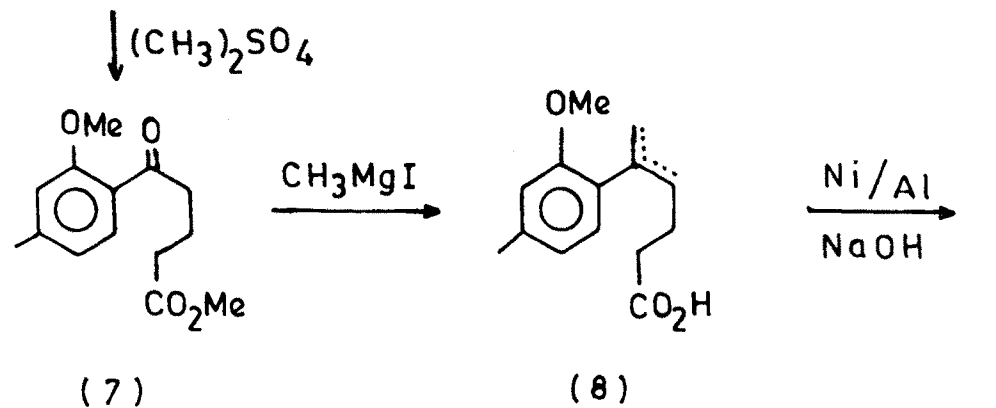
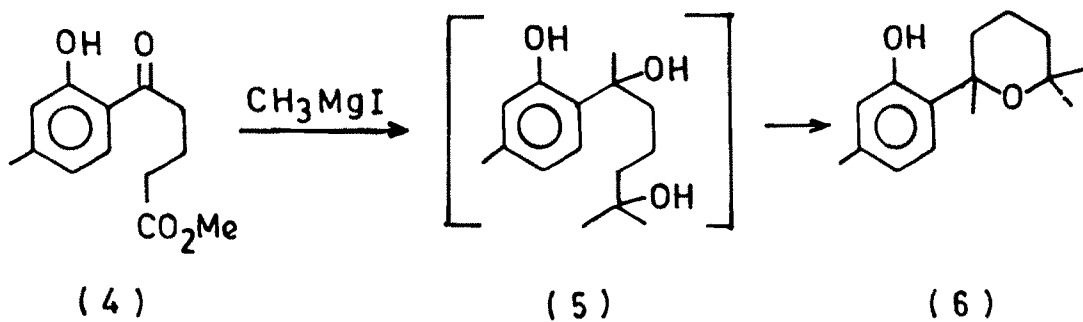
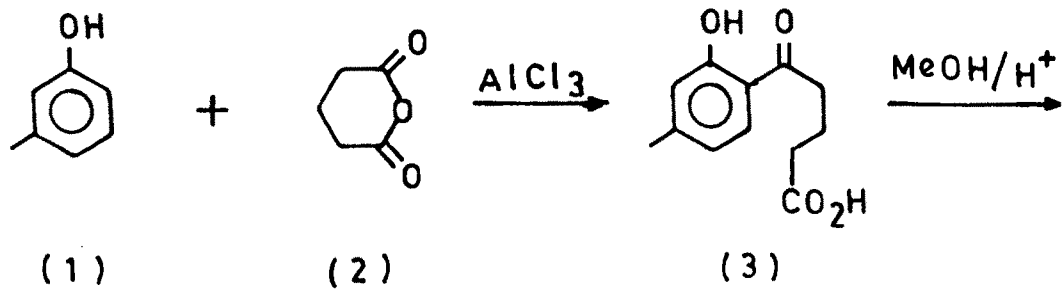
The dissertation entitled "Synthetic studies in natural products" consists of two chapters and embodies accounts of : (1) A review on the synthesis of naturally occurring phenolic sesquiterpenes in chapter-I and (2) Synthesis of curcuphenol methyl ether and 8-methoxycalamenene in chapter-II.

The dissertation begins with a brief review on the synthesis of phenolic sesquiterpenes which are interesting from the biological point of view. Synthesis of monocarbocyclic and bicarbocyclic systems have been discussed separately and important points have been highlighted.

McEnroe and Fenical have reported the isolation of an antibacterial sesquiterpene, curcuphenol (chart 1.14) from gorgonian sea plume Pseudopterogorgia rigida. 8-Methoxycalamenene (1.13) is another sesquiterpene isolated from the marine gorgonian Subergorgia hicksoni by Kashman. The synthesis of curcuphenol methyl ether and 8-methoxycalamenene is reported in chapter-II (chart-I).

Friedel-Crafts acylation of m-cresol glutaric anhydride followed by esterification with methanol gave methyl 5-(2-hydroxy-4-methylphenyl)-5-oxo-pentanoate (1.4, chart-I). The grignard reaction of the ester (1.4) with methyl magnesium iodide followed by acidic work-up yielded 5-methyl-2-

### CHART-1



(2,6,6-trimethyltetrahydro-pyranyl) phenol (1.6), an intermediate required for sydowic acid synthesis. Methylation of (1.4) with dimethyl sulphate gave the methoxy ester (1.7) which on Grignard addition of methyl magnesium iodide followed by reduction of the acid and subsequent esterification yielded methyl 5-(2-methoxy-4-methylphenyl) hexanoate (1.10). The Grignard reaction of methyl magnesium iodide on the ester (1.10) furnished the tertiary alcohol, 6-(2-methoxy-4-methylphenyl)-2-methyl-heptan-2-ol which on dehydration gave curcuphenol methyl ether (1.12). Cyclo-dehydration of the tertiary alcohol (1.11) with polyphosphoric acid gave 8-methoxycalamenene (1.13).