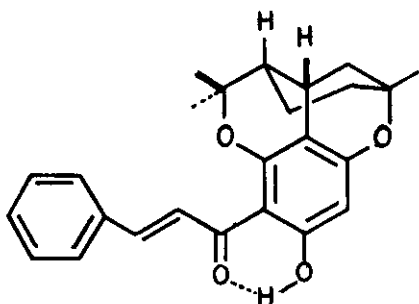


SOLUTION FORM OF RUBRANINE AND RELATED
COMPOUNDS FROM NMR AND X-RAY STUDIES

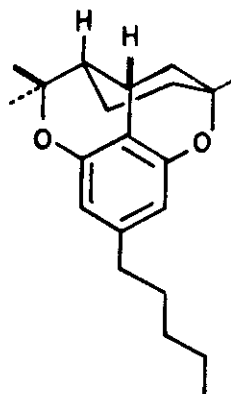
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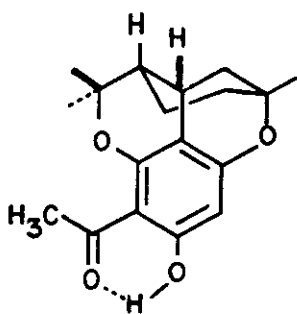
Rubranine (1) and cannabicitran (2) are two examples of a novel class of naturally occurring tetracyclic phenolic terpenes. A combined ^1H , ^{13}C NMR and x-ray crystallographic approach to the analysis of the conformation of these tetracyclic ethers using model compounds desbenzylidene rubranine (3) and (4) is described. The predominant stereoisomer and conformer in solution for 3 is the same as that found in the solid state by x-ray analysis.



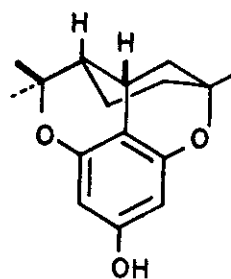
1 Rubranine



2 Cannabicitran



3 Desbenzylidene rubranine



4