SYNTHETIC STUDIES ON NECINE BASES OF PYRROLIZIDINE ALKALOIDS

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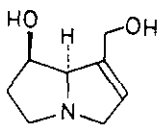
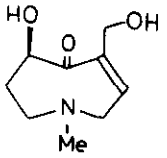
The pyrrolizidine alkaloids of retronecine (1) and otonecine (2) types possess hepatotoxic and, in certain cases, carcinogenic activities. We will discuss the synthetic studies of several necine bases including retronecine (1) and otonecine (2) from a common intermediate 6. γ-Hydroxylation of the unsaturated ester 5, derived from a keto ester 4, gave the key intermediate 6. Acid treatment of the compound 6 afforded the ester 7, from which (±)-turneforcidine (3) was synthesized in two steps. On the other hand, hydrogenation of the compound 6 gave the tricyclic lactone 8, from which (±)-retronecine (1) was synthesized in three steps. Synthetic studies towards (±)-otonecine (2) from the key intermediate 6 are being made, and the details of the results will also be presented.



1 (retronecine)



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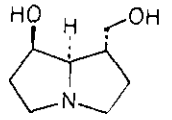
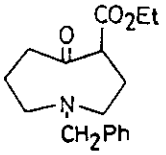


3 (turneforcidine)



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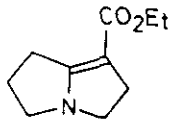

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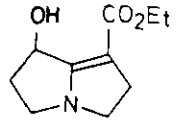

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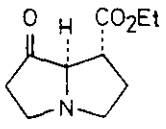

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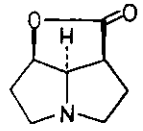

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