

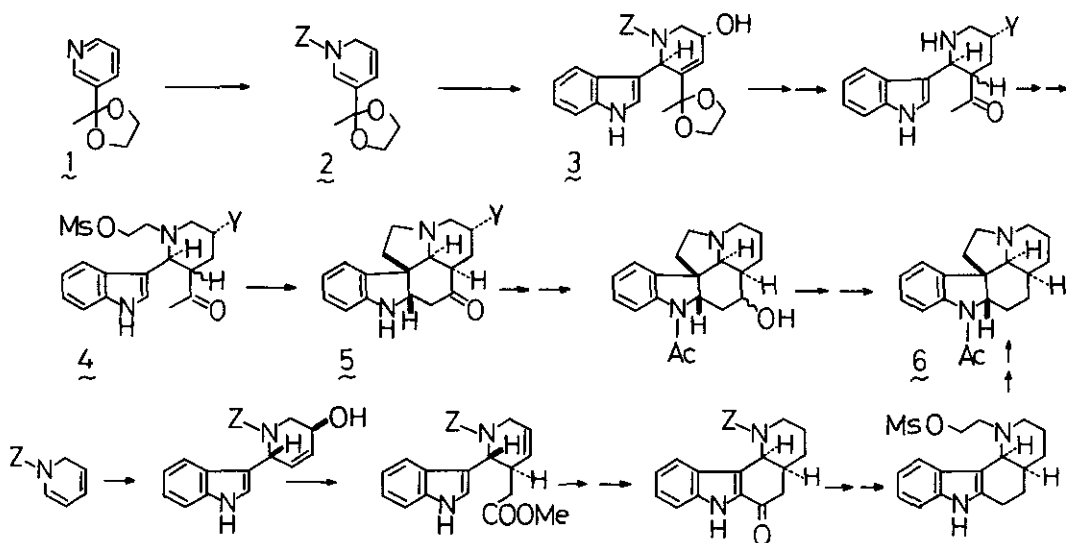
A NEW SYNTHETIC METHOD FOR THE FRAMEWORK OF ASPIDOSPERMA ALKALOIDS

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A novel type of cyclization reaction ($4 \rightarrow 5$) which consisted of two successive carbon-carbon bond formations during a single operation was achieved by treatment of **4** with $(\text{Me}_3\text{Si})_2\text{NK}$ in THF ($-70^\circ\text{C} \rightarrow \text{r.t.}$) in moderate yields, irrespective of the substituent Y (H, OMEM, OCOPh, etc.). For preparation of **4**, our oxygenative nucleophile introduction reaction¹⁾ ($2 \rightarrow 3$) played an important rôle, and further, special device, i.e., reduction of **1** with a bulky reagent, $\text{NaAl}(\text{OCH}_2\text{CH}_2\text{OMe})_2\text{H}_2$ in the presence of $\text{PhCH}_2\text{OCOC}_2\text{H}_5$, made it possible to produce a requisite 5-substituted 1-acyl-1,2-dihydropyridine derivative (**2**) in an almost regioselective manner, otherwise the formation of 1-acyl-3-alkyl-1,2-dihydropyridines being predominant. Pentacyclic structure of **5** possessing the aspidosperma alkaloid skeleton was verified by correlation with N(a)-acetyldeethylaspidospermidine (**6**), which was synthesized previously along an alternative route.²⁾



1) M. Natsume, Y. Sekine, M. Ogawa, H. Soyagimi, and Y. Kitagawa, *Tetrahedron Lett.*, 3473 (1979).

2) M. Natsume and I. Utsumomiya, *Heterocycles*, **17**, 111 (1982).