

A NEW METHOD FOR THE DEOXYGENATION OF HINDERED PRIMARY ALCOHOLS

A. A. Leslie Gunatilaka, N. P. D. Nanayakkara, and M. U. S. Sultanbawa
(*Department of Chemistry, University of Peradeniya, Sri Lanka*)

The selective displacement of a hydroxyl group by hydrogen (deoxygenation) is an important transformation useful especially in the structural elucidation of natural products. Although there are convenient methods available for the deoxygenation of secondary and tertiary alcohols (Barton *et al.*, 1975; Boar *et al.*, 1978; Gunatilaka *et al.*, 1979), no convenient method has hitherto been described for the deoxygenation of primary alcohols.

We report that sterically hindered primary alcohols are conveniently converted into the corresponding alkanes by Lithium-ethylene diamine reduction of the derived acetates. The only side reaction is the regeneration of the starting alcohol (see Table).

TABLE. $\text{Li}-(\text{CH}_2\text{NH}_2)_2$ Reduction of Triterpene Acetates

Triterpene acetate	Product (s) (yield)
27-Acetoxyfriedelane	Friedelane (65%) 27-Hydroxyfriedelane (30%)
6β -Acetoxyfriedelan-3-one	Friedelina ^a (75%)
6β -27-Diacetoxyfriedelan-3-one	Friedlina ^a (60%)
$6\beta,27$ -Diacetoxyfriedelan-3,21-dione	Friedelane-3,21-dione ^a (40%)

^aProduct obtained after oxidation with CrO_3 /pyridine

References:

1. Barton, D. H. R., and Mc Combie, S. W., (1975), *Journal of the Chemical Society, Chemical Communications*, 1574.
2. Boar, R. B., Joukhadar, L., Mc Ghie, J. F., Misra, S. C., Barrett, A. G. M., Barten, D. H. R., and Prokopiou, P. A., (1978), *Journal of the Chemical Society, Chemical Communications*, 68.
3. Gunatilaka, A. A. L., Nanayakkara, N. P. D., and Sultanbawa, M. U. S., (1979), *Tetrahedron Letters*, 1727.