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A New Method for the Deoxygenation of Secondary Alcohols

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Radical-Driven Deoxygenation of Secondary Alcohols: The Barton–McCombie Reaction

$R^1 = \text{Alk (sec)}$ $R^2 = \text{H, Me, SMe, OMe, Ph, OPh, imidazolyl}$

Proposed mechanism:

Selected examples:

67% yield
from ergosterol 85% yield
from α -D-glucofuranose 70% yield
from α -D-glucopyranoside

Significance: The authors reported a very broadly applicable method for the deoxygenation of secondary alcohols, providing complex hydrocarbons in high yields. The alcohol thereby has to be activated by transforming it into its corresponding thioester.

Comment: By using a radical mechanism and the favorable formation of an S–Sn bond, these thioesters can be deoxygenated. This concept has been revived in the Barton–McCombie decarboxylation (*J. Chem. Soc., Chem. Commun.* **1980**, 15, 732).

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