Category

Key words

allylic alcohols Luche reduction lanthanide salts

**Metals in Synthesis** 

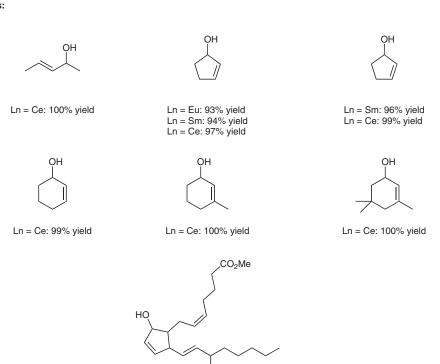
J.-L. LUCHE\* (UNIVERSITÉ SCIENTIFIQUE ET MÉDICALE, GRENOBLE, FRANCE)

Lanthanides in Organic Chemistry. 1. Selective 1,2 Reductions of Conjugated Ketones

J. Am. Chem. Soc. 1978, 100, 2226-2227.

## 1,2-Reduction of Conjugated Ketones: The Luche Reduction

## **Examples:**



Ln = Ce: 91% yield

Significance: In 1978, Luche reported the selective 1,2-reduction of  $\alpha$ , $\beta$ -unsaturated ketones by using sodium borohydride in the presence of various lanthanide chlorides, leading to allylic alcohols in excellent yields.

Comment: Remarkably, the use of lanthanide salts allowed the selective 1,2-reduction of several unsaturated ketones. Additionally, the undesired 1,4-reduction product was not formed which, until then, was a common byproduct in metal hydride mediated reduction methods.

Review: G. A. Molander Chem. Rev. 1992, 92, 29-68.

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