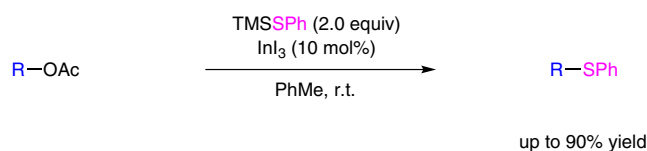


Y. NISHIMOTO, A. OKITA, M. YASUDA, A. BABA* (OSAKA UNIVERSITY, JAPAN)

Synthesis of a Wide Range of Thioethers by Indium Triiodide Catalyzed Direct Coupling between Alkyl Acetates and Thiosilanes

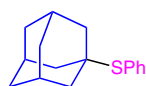
Org. Lett. **2012**, *14*, 1846–1849.

InI₃-Catalyzed Synthesis of Thioethers Using Thiosilanes

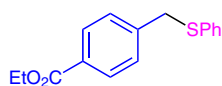


R = (un)saturated aliphatics, aryl carbonyls, adamantyl, OMe-, Cl- and CO₂Et-substituted benzyl, heterobenzyl, propargyl, ferrocene groups

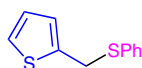
Selected examples:



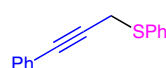
82% yield



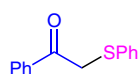
89% yield



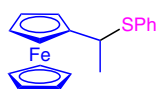
75% yield



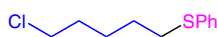
41% yield



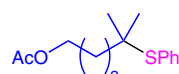
57% yield



28% yield



44% yield



58% yield

Significance: Herein, the authors disclose an indium triiodide catalyzed substitution of the acetoxy group in various alkyl acetates using thiosilanes. This method successfully converts various primary, secondary and tertiary alkyls, as well as propargylic, allylic and benzylic systems into the appropriate thioethers with a high functional group tolerance.

Comment: The corresponding thioethers are obtained in good to excellent yields. In the case of primary alkyl acetates and α -acetoxy carbonyl derivatives, substitution is supposed to proceed via an S_N2 reaction, whereas benzylic, allylic, propargylic and secondary or tertiary alkyl acetates are substituted by an S_N1-type mechanism.

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thiosilanes

thioethers

alkyl acetates

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of the month

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