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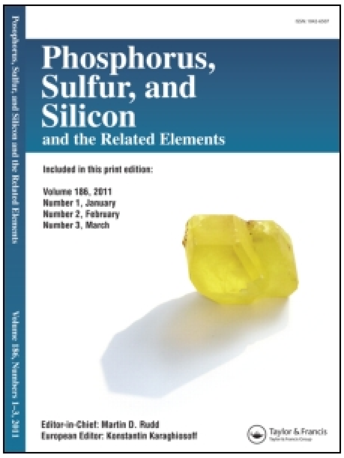

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Recent Advances in the Synthetic Elaboration of Sultones

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Recent Advances in the Synthetic Elaboration of Sultones

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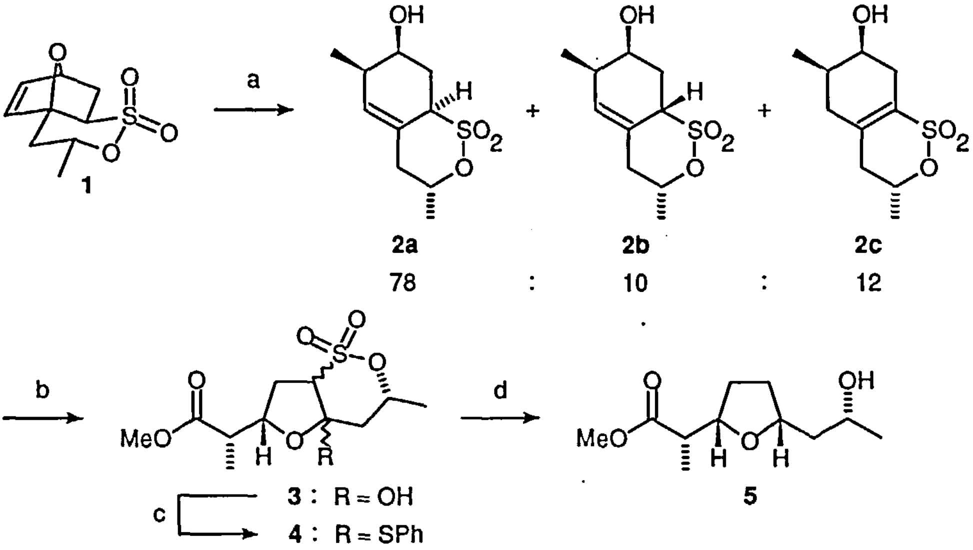
New methods for the elaboration of sultones enable a short and highly stereoselective synthesis of methyl nonactate and establish vinylsulfonyl chloride as an allene equivalent for the intramolecular Diels-Alder reaction.

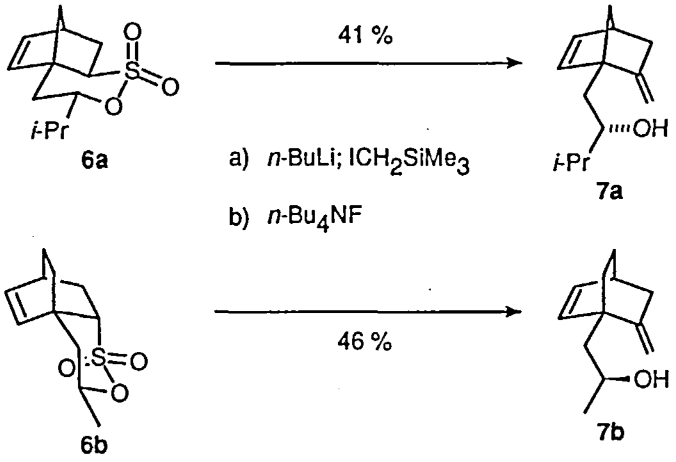
KEY WORDS sultones, methyl nonactate, desulfurization, methylenation

The intramolecular Diels-Alder reaction of vinylsulfonates derived from hydroxyalkyl substituted 1,3-dienes provides an efficient access to δ-sultones which are versatile intermediates for organic synthesis. Thus, the furan adduct **1** is converted into methyl nonactate (**5**) using the four step sequence depicted below.[1]

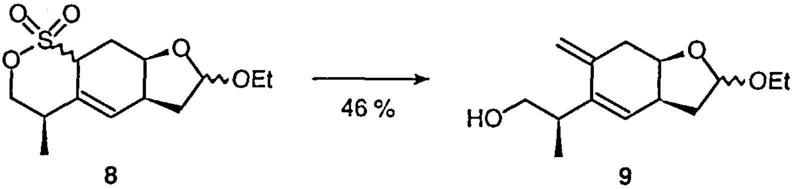


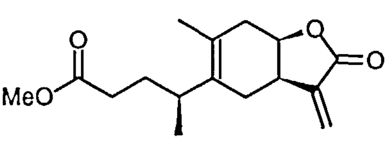
a: 2 MeLi (54 %). b: O_3, MeOH; Ac_2O, pyridine (66 %).
c: PhSH, $BF_3{\cdot}Et_2O$ (93 %). d: Raney Ni (51 %).

A novel desulfurization of sultones **6** with simultaneous methylenation that resembles our procedure for oxidative desulfurization[2] leads to the bishomoallylic alcohols **7** which can be regarded as formal [4+2] adducts of allene with the hydroxyalkyl substituted 1,3-dienes from which the sultones **6** were prepared.[3]

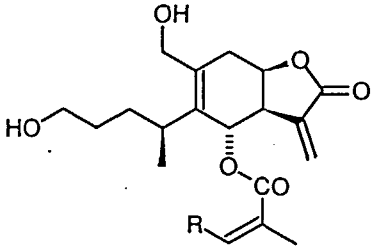


Application of this process to sultone **8** yields the 1,3-diene **9**,[3] a promising intermediate for the synthesis of the 1,10-*seco*-eudesmanolides eriolanin and eriolangin by a route similar to the one that led to ivangulin.[4]





ivangulin



R = H : eriolanin
R = Me : eriolangin

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