

Thesis Title 1-Lithio-2,2-Diphenoxy-1-Phenylsulfonylcyclopropane
as β -Lithio Acrylate Synthon

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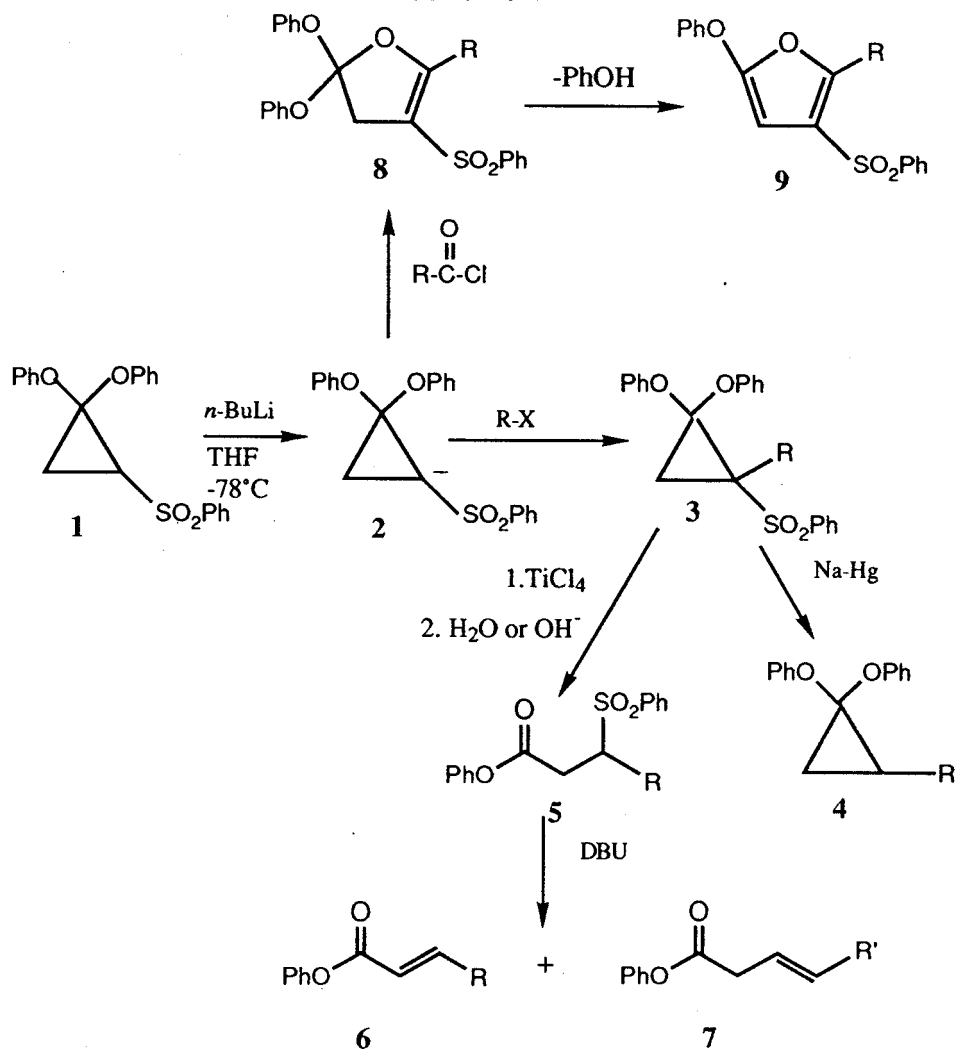
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ABSTRACT

2,2-Diphenoxy-1-phenylsulfonylcyclopropane **1** was lithiated by treatment with *n*-butyllithium in THF -78 °C to give the α -sulfonyl carbanion **2** which reacted with alkyl halides to give the alkylated products **3** in moderate to good yields. Hydrolysis of **3** with TiCl₄ gave β -sulfonyl esters **5** which were converted to α,β -unsaturated esters **6** and β,γ -unsaturated esters **7** by treatment with diazabicycloundecene (DBU). Furthermore, cyclopropane acetals **4** were obtained by reduction of **3** with Na-Hg. On the other hand, the reaction of the α -sulfonyl carbanion **2** with acid chlorides gave the furan sulfones **9** via the dihydrofurans **8** (Scheme I).

Furthermore the reaction of the anion **11** derived from 2-(*N*-methylanilino)-2,4-hexadienenitrile (**10**) with electrophiles was studied. It was found that the anion **11** reacted with electrophiles (aldehydes and ketones) regioselectively at the 5-position to provide the d⁵-adduct. Hydrolysis of **12a** by treatment with conc.H₂SO₄ in methanol and H₂O provided furan **15** (Scheme II).

Scheme I



Scheme II

