CATIONIC POLAR CYCLOADDITION WITH α-CHLOROSULFIDES

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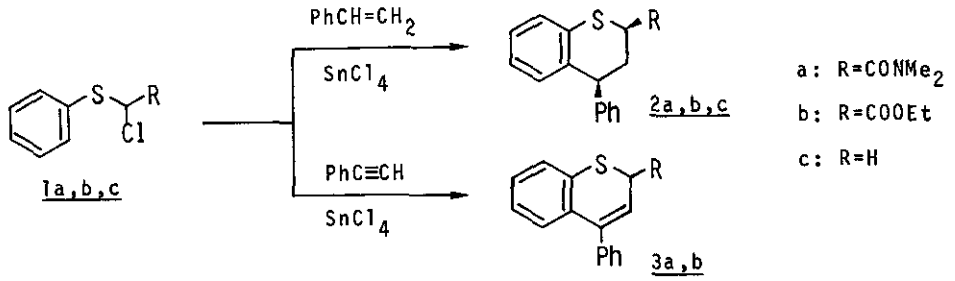
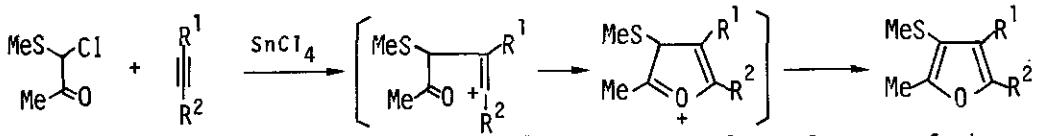
Cycloadditions with positively charged ionic components are known as cationic polar cycloadditions. A number of polar systems capable of cycloadditions have been described in the literature. In particular, the polar systems containing nitrogen-stabilized carbocation have been widely investigated. However, the cycloaddition with the system containing sulfur-stabilized carbocation has received scant attention. We wish to report here the following two types of cationic polar cycloadditions with α-chlorosulfides giving a variety of heterocycles.

1) [4$^+$+2] Cycloaddition : Syntheses of Thiochromans and Thiochromens[1)]

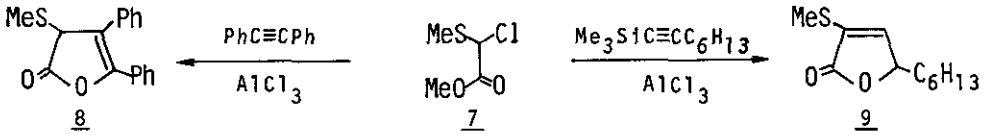


2) [3$^+$+2] Cycloaddition

a) Synthesis of Furans



b) Synthesis of 2-Furanones



1) Y. Tamura, et al., Tetrahedron Lett., 22, 3773 (1981).