2-LITHIO-2-TRIMETHYLSILYL-1,3-OXATHIANE: A POSSIBLE ACYL DIANION EQUIVALENT

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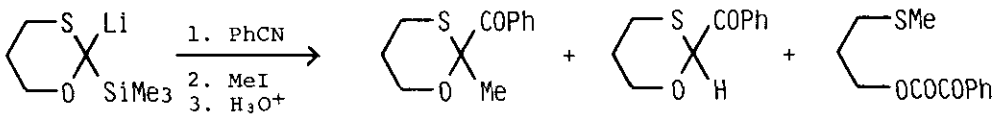
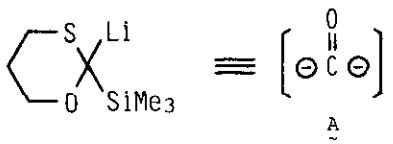
Based on the studies on the chemical properties of 2-heterosubstituted 1,3-oxathianes, we selected 2-lithio-2-trimethylsilyl-1,3-oxathiane (1) as a most possible acyl anion equivalent of synthetic utility[1]. The reaction of 1 with various electrophiles afforded the expected product in reasonable yields.

The reaction of 1 with cyanobenzene at -78°C followed by addition of methyl iodide gave 2, 3, and 4. Generation of 2 is most interesting, because it should have been formed by successive attacks of two different electrophiles in one-pot. Thus, 1 can be regarded as an equivalent of acyl dianion A, if 2-benzoyl-2-methyl-1,3-oxathiane 2 is successfully converted into the parent carbonyl compound. Realization of this idea will be presented.



1 2 (45%) 3 (13%) 4 (10%)



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1. K.Fuji, M.Ueda, and E.Fujita, Tetrahedron Lett., 22, 2005 (1981).