Alkylation-Cyclization-Aromatization Reactions of Ketones with (3-Silyl)Propargyl Carboxylates to yield 2-Methylfurans

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Senior Seminar Abstract

Ketones are easily converted to enol silanes in the presence of trimethylsilyl trifluoromethane sulfonate and an amine base, conditions that also result in the ionization of terminally silylated propargyl acetates. When these events occur in a single flask, the intermediates undergo SN1 reaction to generate a beta-propargyl ketone intermediate. Upon concentration in the presence of trace water, the intermediate cyclizes to yield 2-methylfurans in high yield.