EXPLORATION OF A GREEN SUPPORT FOR NITROALDOL CONDENSATION

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ABSTRACT

The classic Henry Reaction, a nitroaldol condensation, is notoriously problematic. It is driven by a strong base, whose presence initiates unwanted side reactions and results in poor yields. Additionally this reaction requires long reaction times, solvent use, and difficult extractions. Thus an alternative method would be desirable in the synthesis of nitroalcohols. Recent literature\textsuperscript{1-4} states that excellent yields are achieved when nitroaldol condensations occur in the presence of an aminosilane-treated solid support. This process reduces many complications of traditional Henry reactions by minimizing side reactions, shortening reaction times, eliminating solvent use, and simplifying product isolation. Thus, the solid support provides a simpler and greener synthesis of nitroalcohols. The goal of this work is to synthesize and explore an aminosilane that, when attached to commercially available silica gel, promotes the nitroaldol condensation for both $\alpha$-branched and linear aldehydes.

\textsuperscript{3} G. Demicheli; et al. Tet. Let. 2001, 42, 2401-2403.