Rhodium-Catalyzed Decarbonylation of Acylysilanes

(1Graduate School of Engineering, Osaka University) ○Tomoki Yoshida, Mamoru Tobisu

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Decarbonylation of aldehydes, which is known as Tsuji-Wilkinson decarbonylation, is broadly used in organic synthesis.1 On the other hand, decarbonylation of ketones has met with limited success because of the inertness of carbon–carbon bonds. Decarbonylation of unstrained, simple ketones requires the stoichiometric rhodium complexes.2 Recently, our group reported nickel-mediated decarbonylation of diaryl ketones, although a stoichiometric amount of nickel is still essential to promote the reaction.3 Narasaka and co-workers reported that bis(silyl)ketones, silicon analogs of ketones, can be decarbonylated by catalytic amount of palladium complexes.4 In this context, our group5 and Rueping’s group6 independently reported nickel-catalyzed decarbonylation of acylysilanes. In this study, we found that decarbonylation of acylysilanes can also be catalyzed by rhodium complexes.