Palladium Catalyzed Aldehyde Decarbonylation Reaction

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Existing decarbonylayion catalyst suffers from high cost, limited substrate scope, harsh/impractical reaction conditions. Often, the efficient catalytic (or even stoichiometric) decarbonylation are done under elevated reaction temperatures or with a chemical scavenger to remove the evolved CO. In total synthesis, a stoichiometric (not catalytic) amount of Rh–catalyst is often employed for crucial decarbonylations of aldehyde functionalities. Further, the reported catalysts have limited substrate scope with very few examples involving decarbonylation of heterocyclic aldehydes. It would thus be highly desirable to provide a process that facilitates an efficient catalytic decarbonylation of aldehydes circumventing the aforesaid drawbacks of the prior art processes.

R-CHO — Pd-cat. R-H

We have developed a simple, economical, efficient and easily scalable method for practical decarbonylation reaction with palladium catalyst. Details of our findings will be discussed along with mechanistic insights. Related synthetic transformation(s) along with their bio–relevance will be discussed.

Also, a brief overview of some of the ongoing projects in our group will be presented.