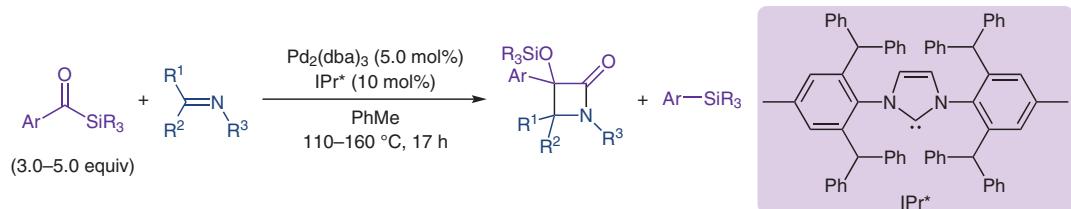
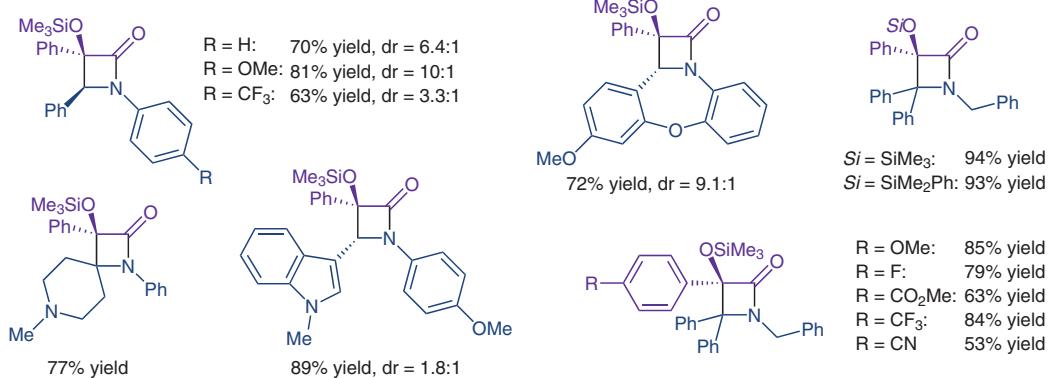


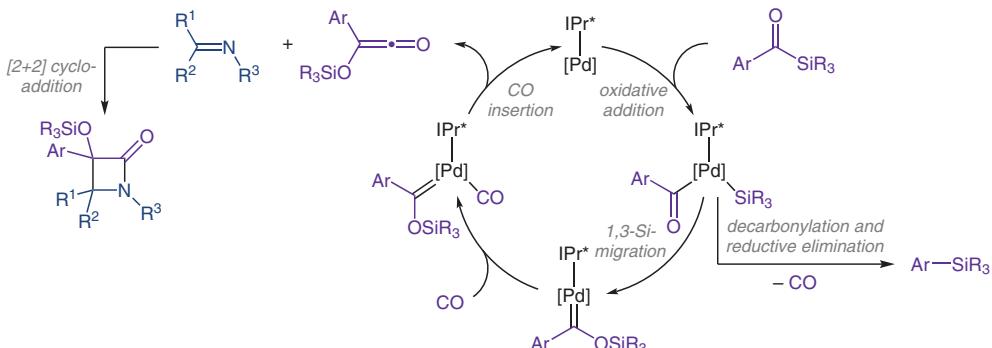
Palladium-Catalyzed Carbonylative Cycloaddition of Acylsilanes and Imines to Access β -Lactams



Selected examples:



Proposed mechanism:



Significance: Tobisu and co-workers disclosed a palladium-catalyzed protocol for the carbonylative cycloaddition of acylsilanes and imines to form highly functionalized β -lactams. The key feature of this reaction is the generation of a Fischer-type palladium siloxycarbene complex from the acylsilane, as verified by X-ray crystallographic analysis.

Comment: The carbon monoxide gas required for the formation of the ketene intermediate is formed *in situ* by decarbonylation of the acylsilane. The shown mechanism is supported by density functional theory calculations and experimental investigations, which exclude a photo-induced isomerization of the acylsilane to a siloxycarbene.