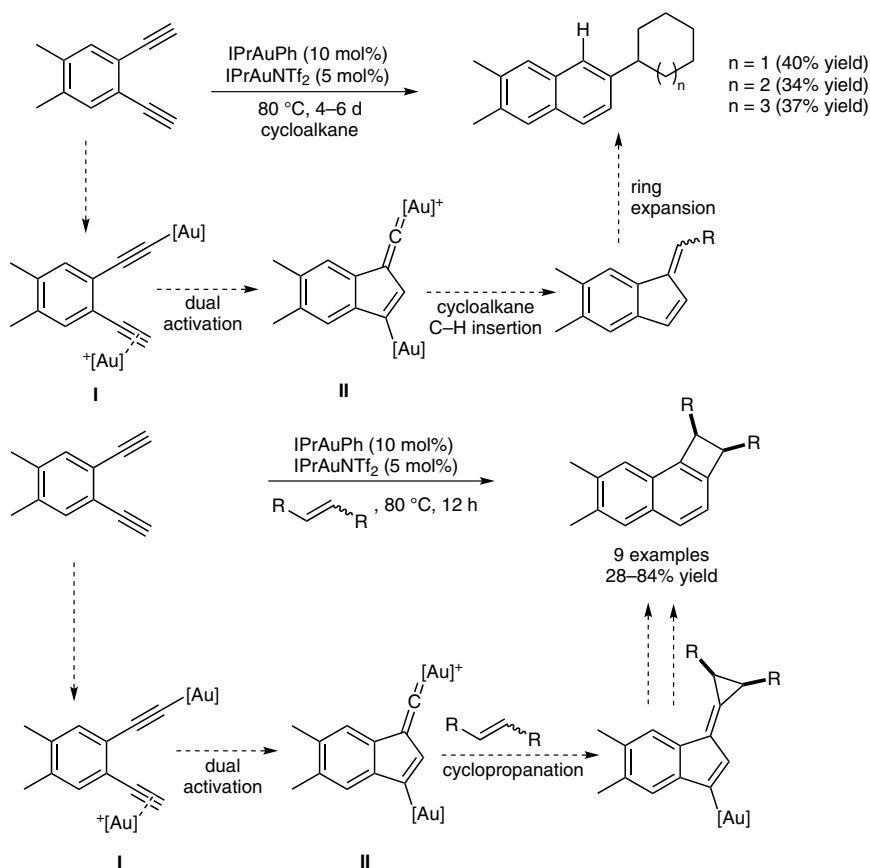


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Gold Vinylidene Complexes: Intermolecular C(sp³)–H Insertions and Cyclopropanations Pathways
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Intermolecular Reactions of Gold–Vinylidene Complexes



Significance: This communication reports the application of gold–vinylidene complexes in intermolecular C(sp³)–H insertion reactions and cyclobutene syntheses. Vinylidene complex **II** is accessed via dual activation of the dialkyne starting material. In the presence of a cycloalkane, the authors found that **II** follows a C(sp³)–H insertion pathway to form the corresponding cycloalkylated products. However, the complex undergoes cyclopropanation with an alkene to eventually generate the benzocyclobutene derivative shown.

Comment: The authors comment on the high stereoselectivity of the conversion of the dialkyne into benzocyclobutene, particularly noting that the stereochemical configuration of the alkenes used is cleanly reflected in the product. Additional experiments whose results are in favor of a stereospecific cyclopropanation pathway are discussed along with a proposed mechanism of the process.

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