***Bis*-N-heterocyclic Carbene based Gold(I) Catalysts: Synthesis and Catalytic Application in Hydrohydrazidation of Terminal Alkynes**

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Gold catalysis has been emerged as a powerful synthetic method in modern organic synthesis due to π-acidity property. Gold-based catalysis is used for the synthesis of varieties of heterocyclic systems, which find numerous applications in medicinal chemistry.1-2 Gold catalysts have been utilized in activation of unreactive alkynes toward nucleophilic addition reactions.3 Along these lines, we have prepared a series of new gold(I)-*N*-heterocyclic carbene complexes. The gold(I) complexes (**1-2**) were synthesized by the transmetallation route with addition of gold precursor [Au(SMe2)Cl] with silver-NHC complexes in dichloromethane at room temperature and are characterized by the NMR spectroscopy and X-ray crystallography. These new complexes supported by N-heterocyclic carbene shows good catalytic activity towards hydrohydrazidation of alkynes with various hydrazides. Here in, the synthesis and characterization of these new gold(I)-NHC complexes and their catalytic synthesis approach toward acylhydrazones through nucleophilic addition of hydrazides to alkynes will be presented.



**References:**

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Thrust area: - Organometallics and Homogenous catalysis

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