

C-H insertions in oxidative gold catalysis: Synthesis of bicyclic dihydropyran-3-ones from in situ generated α -oxo gold carbenes through the relay of vinyl cation intermediates

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An expedient synthesis of bicyclic dihydropyran-3-one compounds is realized in a cascade triggered by oxidative gold catalysis. In this reaction, the initial α -oxo gold carbene intermediate, generated upon gold-catalyzed oxidation of alkyne, could be trapped by a tethered C-C triple bond, thereby generating a vinyl cation intermediate. This intermediate of highly electrophilicity is likely responsible for the intramolecular concerted C-H insertion. The reaction provides a simple way of constructing functionalized bicyclic system from easily accessible propargyl ethers.

