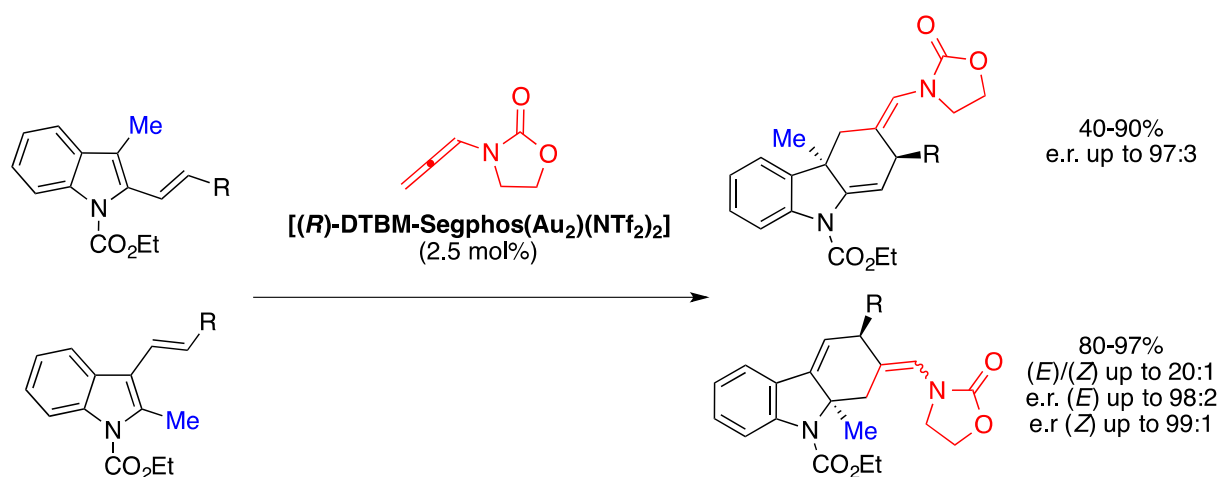


Gold(I)-catalyzed [4+2] cycloaddition reactions of vinylindoles and allenes

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Carbazole and tetrahydrocarbazole rings are the key structural motif in a great number of biological active molecules, including natural alkaloids and synthetic products.(1) For this reason, strategic syntheses of these indole derivatives are highly required, in particular when based on asymmetric methodologies. In this research field, 2- and 3-vinylindoles have become versatile 4C building blocks for the synthesis of complex tetrahydrocarbazole derivatives by means of [4+2] cycloadditions.(2) Among dienophiles, it has been shown that gold activated allenes could participate in [4+2] processes(3) and we published the first example of gold catalyzed reaction of 2- and 3-vinylindoles with allenamides(4) and allenyl esters.(5) In this latter work we reported also some preliminary investigations on enantioselective synthesis of tetrahydrocarbazoles, by conducting the reaction in the presence of a chiral gold(I) phosphoramidites. Prompted by these results and taking into account the importance of asymmetric tetrahydrocarbazole synthesis, we next explored the reactivity of 3/2-substituted-2/3-vinylindoles with *N*-allenamides under chiral gold(I) catalysis for the synthesis of a new series of dearomatized indoles bearing a quaternary C4a/C9a stereocenter (Scheme 1).(6) The results obtained in this work will be presented in the context of our investigations on gold(I) catalyzed syntheses of tetrahydrocarbazoles.



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