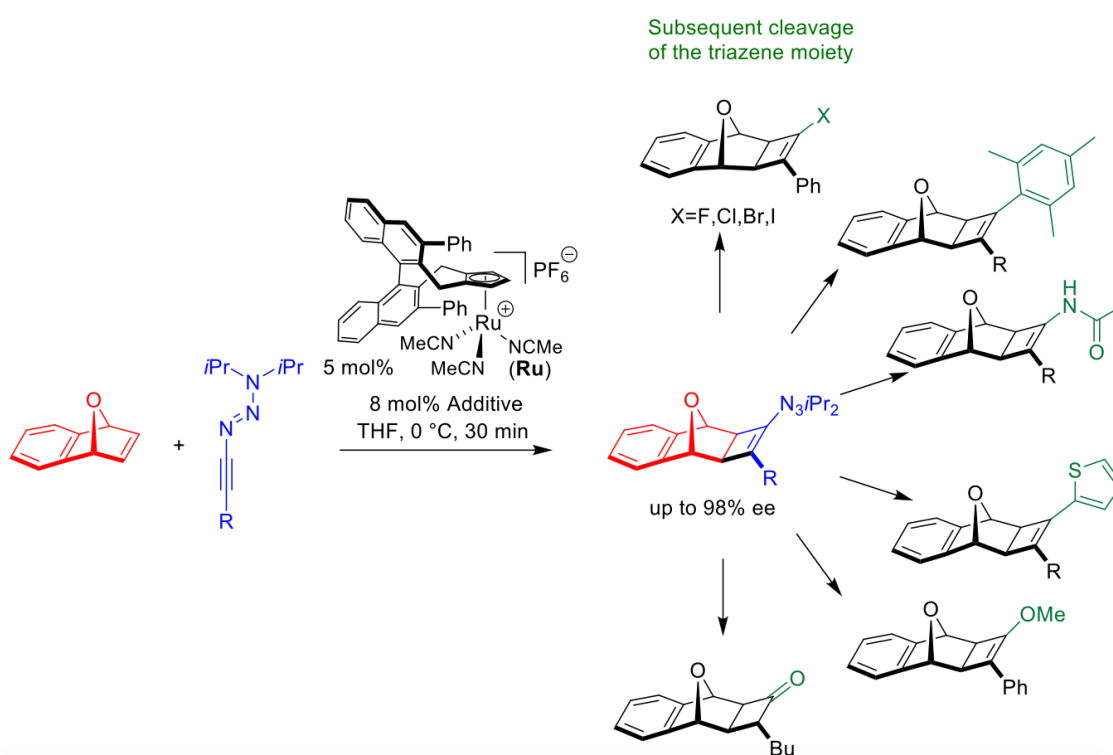


## Divergent Asymmetric Synthesis of Polycyclic Compounds via Vinyl Triazenes

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Recently, our group reported a procedure which allows preparing 1-alkynyltriazenes by a simple one-pot-reaction using nitrous oxide.[1] Subsequently, we have shown that 1-alkynyltriazenes react as activated alkynes with a reactivity profile similar to ynamides.[2] In continuation of these studies, we have used 1-alkynyltriazenes in Ru-catalyzed [2+2] cycloadditions reactions with bicyclic alkenes. In collaboration with the group of Prof. N. Cramer, we have shown that 1-alkynyltriazenes are highly reactive substrates for enantioselective CpXRuII-catalyzed [2+2] cycloaddition reactions with bicyclic alkenes. High yields and enantioselectivities were obtained giving access to a broad range of cyclobutenyl triazenes. A salient feature of the vinyl triazenes is the behavior as divergent platform intermediates.



[1] Kiefer, G.; Riedel, T.; Dyson, P.; Scopelliti, R.; Severin, K.; *Angew. Chem.* **2015**, *127*, 306–310; *Angew. Chem. Int. Ed.*, **2015**, *54*, 302–305.

[2] Perrin, F.G.; Kiefer, G.; Jeanbourquin, L.; Racine, S.; Perrotta, D.; Waser, J.; Scopelliti, R.; Severin, K. *Angew. Chem. Int. Ed.* **2015**, *54*, 13393–13396.