

Lewis Base Activation of Lewis Acids: Development of a Catalytic, Enantioselective Selenolactonization Reaction

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Selenocyclofunctionalizations represent a powerful and synthetically versatile method for intramolecular, carbo- and heterocyclic ring formation. In particular, selenolactonizations and etherifications are commonly employed strategies in complex natural product synthesis. Despite years of extensive development, only diastereoselective variants of this reaction are known.

Lewis base activation of electrophilic selenium agents substantially enhances the rate of the selenolactonization reaction. Both the nature of the selenium electrophile and the Lewis base donor atom are vital for successful catalysis. Moreover, a proton source is needed for formation of the active selenylating agent. Development of a catalytic, enantioselective selenolactonization reaction with a chiral Lewis base donor is in progress.

