Conception of Strong Cationic Organoacids and their Applications in Synthesis

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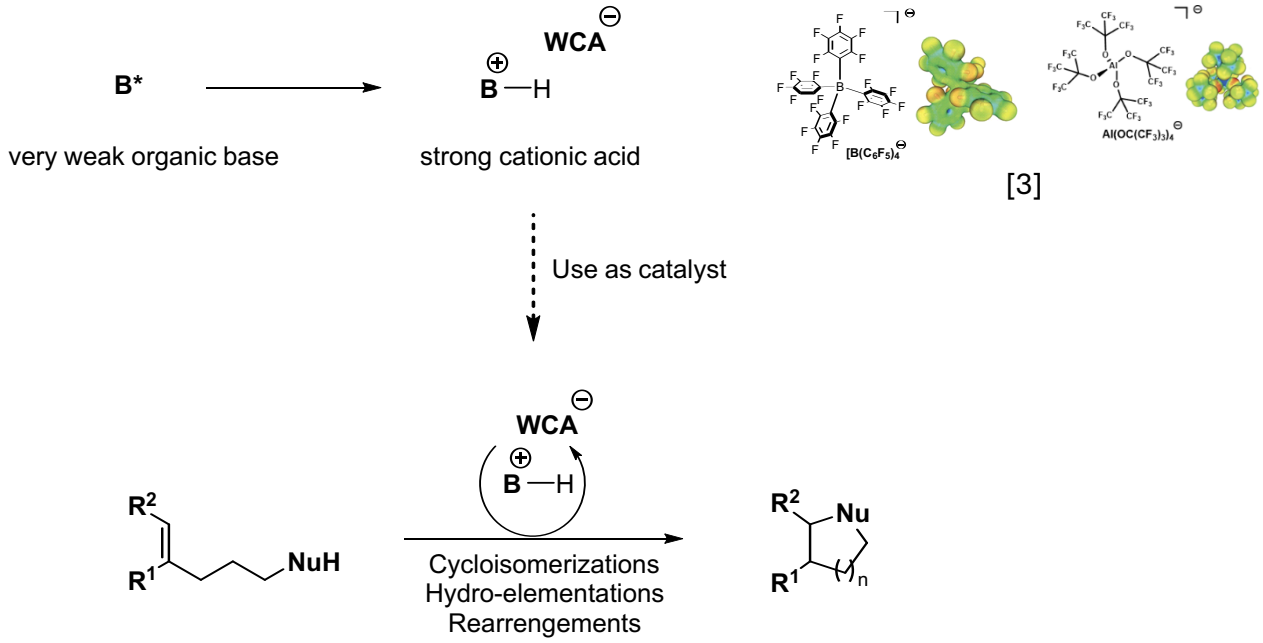
Systems exhibiting high acidity turned out to be of high interest due to their ability to catalyze various types of reactions containing poorly reactive substrates such as olefins, leading to valuable molecules.[1] Among them, several strong chiral Brønsted Acids demonstrating amazing performance in metal-free catalysis have recently been reported.[2] This family of catalysts has the particularity to be electronically neutral, so the catalysis is assisted by the potentially chiral anion. We have developed an efficient way to access easily handled strong cationic organoacids obtained from the protonation of various very weak bases **B*** (pk_{BH^+} <0). This protonation is achieved by using cheap and commercially available compounds. We are able to isolate and characterize the corresponding conjugated acids as an unprecedented new group of ionic acids of type **1** featuring weakly coordinating anions. We are now investigating their potential reactivity as Brønsted acid catalysts toward both inter and intramolecular reactions. Finally, if chiral, the chosen weak base can bring the possibility to perform asymmetric catalysis through an original enantioselective protonation process.



References

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