Unprecedented asymmetric organocatalytic Morita Baylis Hillman reactions of maleimides with isatin derivatives

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Maleimide derivatives have emerged as excellent dienophiles/ dipolarophiles in asymmetric cycloadditions, as well as Michael acceptors in stereoselective organocatalysis and transition-metal catalysis. In addition to this, maleimides are also used in asymmetric cascade reactions, which involve the initial addition of a nucleophile to the double bond and the resulting species adds to an electrophile to generate two or more stereogenic centers. Even though, maleimides did undergo nucleophile initiated cascade reactions but their use as donors in Morita-Baylis-Hillman reaction has not been explored. Our foray into the use of Maleimides as nucleophilic partners in asymmetric MBH organocatalytic reactions was successful with isatin and isatin imine yielding products with up to 99% ee.

References