

Cascade Reactions for Alkaloid Synthesis

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Sequential transformations enable the facile synthesis of complex natural products from simple building blocks in a single preparative step. Their value is amplified if they also create multiple stereogenic centers. Our research program at Emory has focused on using new cascade reactions of push-pull dipoles and amidofurans for alkaloid synthesis. Our interest in using these domino sequences originated from some earlier work centered on the Rh(II)-catalyzed cyclization/cycloaddition cascade of α -diazoimides containing tethered π -bonds. Making use of these cascade reactions, we have been able to rapidly assemble several alkaloidal systems in excellent yield.