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HYPERVALENT IODINE(III) REAGENTS AS USEFUL TOOL FOR THE SYNTHESIS OF BIOACTIVE HETEROCYCLES

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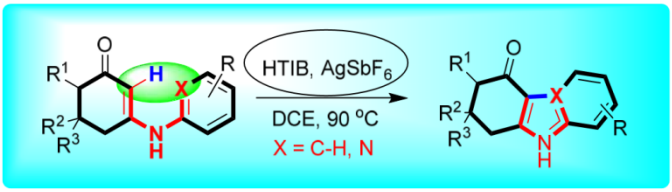
Abstract. The upsurging research interest in hypervalent iodine molecules have been increased tremendously due to their easy availability, milder oxidizing nature in combination with environmental benign behavior.[1] These reagents have been widely applied for the synthesis of heterocyclic frameworks via C-C and C-N bond formation reactions. Although the transition metal catalysts are the well-established area of research for the synthesis of C-C and C-N bond formation.[2] However, the various hazards and difficulties associated with transition metal catalysis have led chemists to think about the suitable alternatives. In this concern, hypervalent iodine reagents have been found as a powerful tool for such type of organic transformations.[3]

In our present research we have disclosed a highly efficient and flexible protocol for intramolecular annulation of exocyclic-*β*-enaminones for the synthesis of carbazolones and imidazo[1,2-*a*]pyridines via counter anion controlled free radical mechanism promoted by hypervalent iodine(III).[2] The co-operative behavior of HTIB and $AgSbF_6$ plays a linchpin role in the intramolecular annulation process through C-C and C-N bond formation to give the desired carbazolones and imidazo[1,2-*a*]pyridines.



HTIB and $AgSbF_6$ single reagent system for selective **C-C** and **C-N** bond formation

References

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3. Bhattacherjee, D., Thakur, V., Sharma, S., Kumar, S., Bharti, R., Reddy, C. B., Das, P. (2017). *Adv. Synth. Catal.*, **359**, 2209.