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

D. Bhattacherjee, a G. V. Zyryanov, a,b P. Das c

a Department of Organic and Biomolecular Chemistry, Chemical Engineering Institute, Ural Federal University, 19 Mira St., Yekaterinburg, K-2 620002, Russian Federation.
E-mail: bhattacherjee130@gmail.com

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 AgSbF6 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.

References