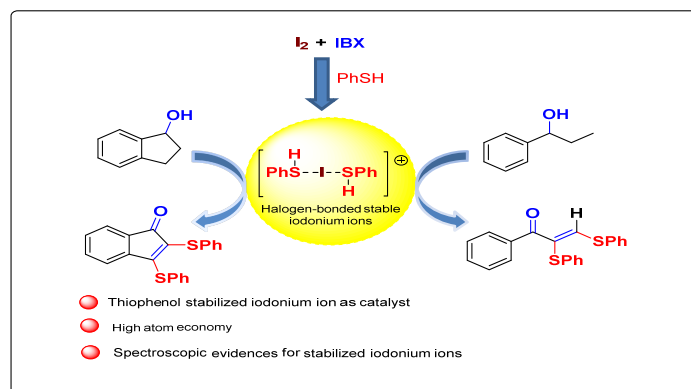


THIOL-COORDINATED IODONIUM ION CATALYSIS: A DOMINO SYNTHESIS OF Z-SELECTIVE α,β -DIPHENYLTHIO ENONES FROM EASILY ACCESSIBLE SECONDARY ALCOHOLS

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The application of halogen-bonded iodonium ions in organic synthesis remains largely unexplored. Herein, a domino synthesis of Z-selective α,β -diphenylthio enones is developed from easily available benzylic secondary alcohols employing the stable halogen-bonded thiophenol stabilized iodonium ion. The iodonium ions are generated in solution phase with the I_2 /IBX redox mixture. The HRMS analysis of the reaction mixture and UV-Vis experiments support the formation of thiol-coordinated iodine(I) intermediates. Several control experiments establish that the reaction proceeds via the oxidation of alcohol to ketone, α -thiolation of ketones followed by α,β -unsaturation and finally the β -thiolation of α,β -unsaturated ketones to generate bis-vinyl sulfides. The thiol-coordinated iodonium ions are highly efficient catalysts to catalyze multiple functional group transformations in a cascade manner.



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