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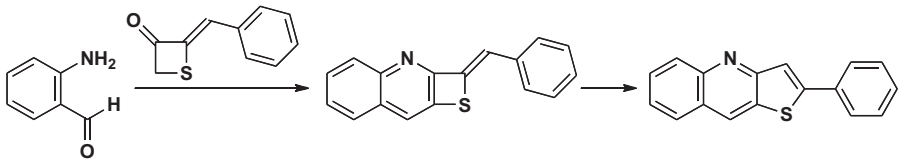
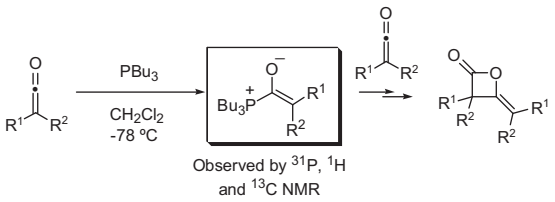
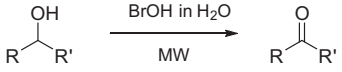
Contents

COMMUNICATIONS

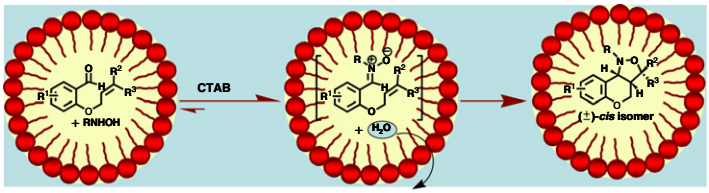


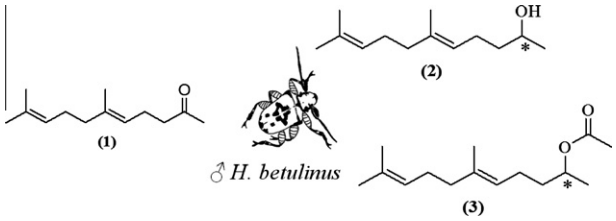


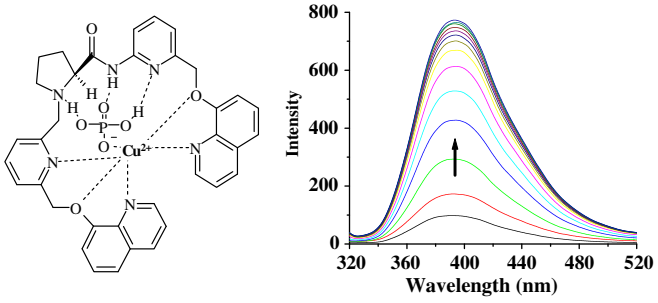
The mechanism of the PBu_3-catalyzed homodimerization of ketoketenes has been investigated and compared with that of the previously reported $P(OMe)_3$-mediated homodimerization of dimethylketene. NMR studies and intermediate trapping experiments of the PBu_3-catalyzed reaction implicated the involvement of tetravalent phosphonium enolate intermediates.

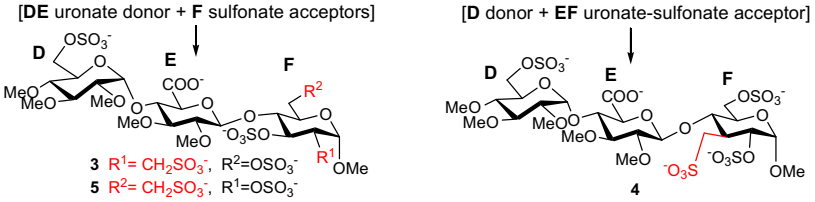


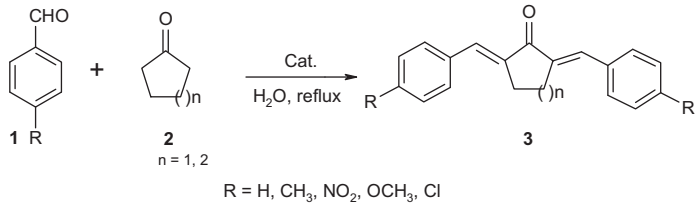
An improved, gentle, cyclic microwave activation technique for the oxidation of secondary alcohols using nonhazardous BrOH as the reagent in acidic water is reported.

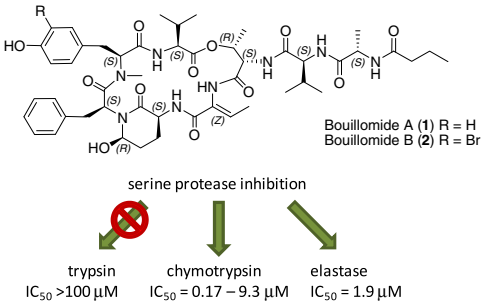


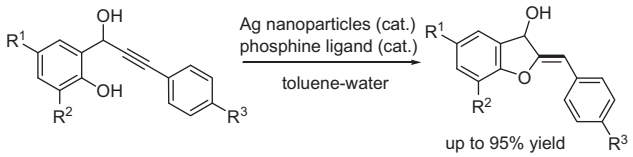


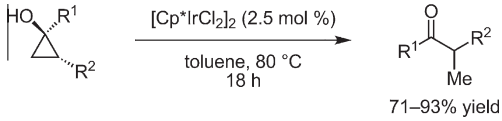


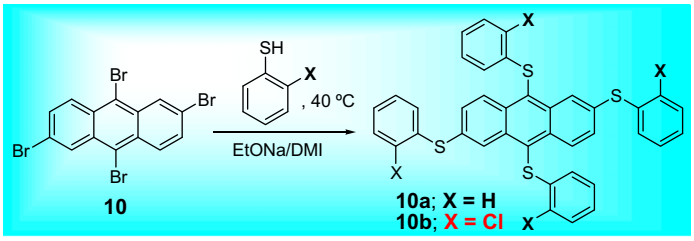


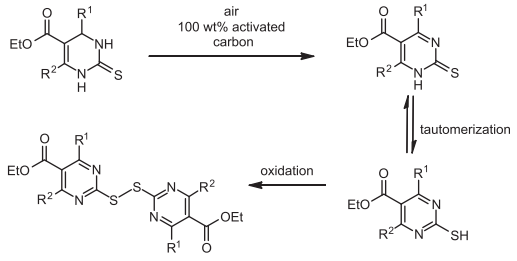


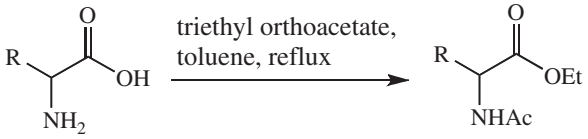




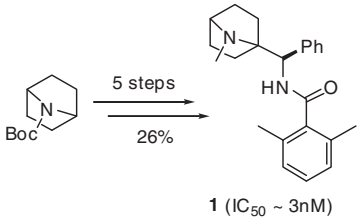




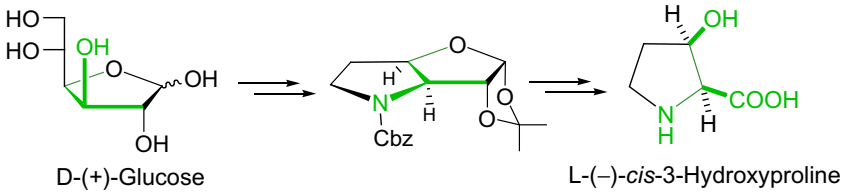


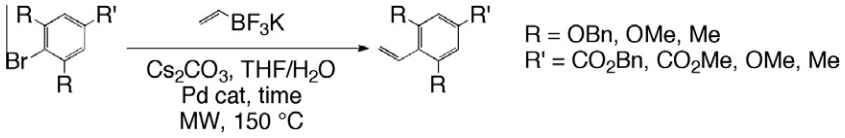


The concurrent esterification and N-acetylation of amino acids with triethyl orthoacetate is a useful synthetic process. Stereochemical outcome, stoichiometric studies, and structural variation of the amino acids provided unexpected mechanistic insights.

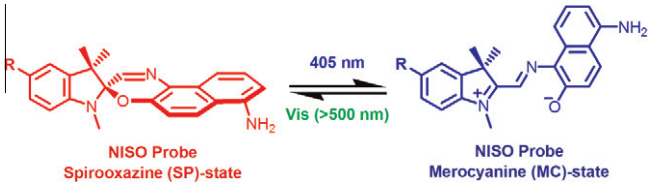


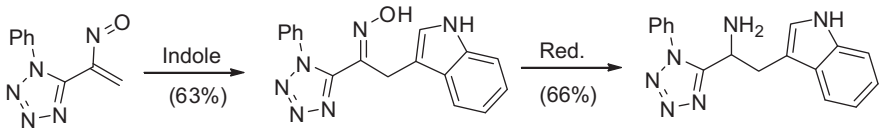
Generation and subsequent electrophilic reaction of a Boc-protected azabicyclo[2.2.1]heptane anion led to efficient preparation of the potent GlyT1 uptake inhibitor 1 in five steps and 26% overall yield.

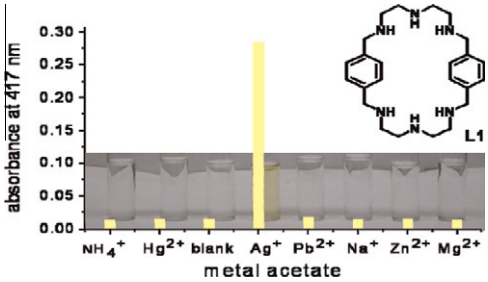




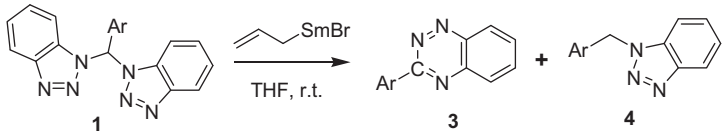
The Suzuki–Miyaura cross-coupling of sterically hindered and electron-rich *ortho*,*ortho*'-substituted aryl halides with potassium vinyltrifluoroborate utilizing microwave irradiation has been conducted while adjusting solvent ratio, irradiation time, and catalyst loading to find optimal conditions. Coupling of benzyl 3,5-bis(benzyloxy)-4-bromobenzoate leads to a mixture of the desired styrene derivative, and the reduced product. 4-Bromo-1,3,5-trimethoxybenzene, methyl 4-bromo-3,5-dimethoxybenzoate, and mesitylene bromide were also coupled to test the breadth and scope of this methodology. Of these substrates tested only 4-bromo-1,3,5-trimethoxybenzene was not vinylated successfully, which is believed to be due to the electron-rich nature of this system.



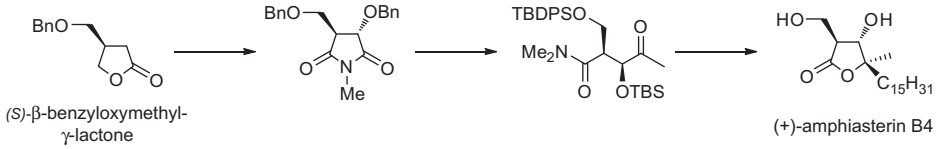


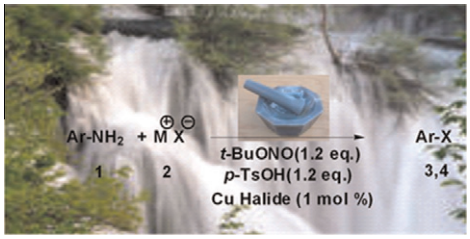


The ease of generation of silver nanoparticles by using hexazamacrocycle ligand, **L1** is utilized for the visual detection of the presence of silver ions at lower concentrations.

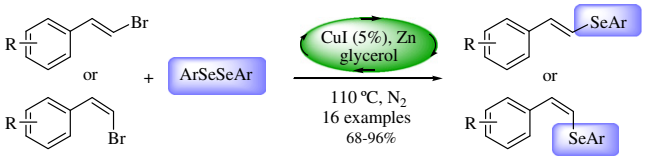


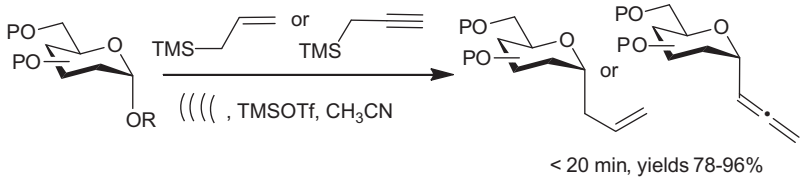
3-Aryl-1,2,4-benzotriazines were formed unexpectedly by the treatment of 1,l-bis(benzotriazol-1-yl)methylarenes with allylsamarium bromide. A radical process was proposed involving steps, such as fragmentation, ring-opening, and cyclization.

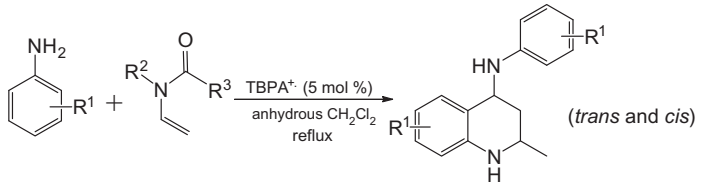




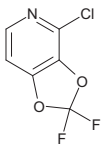
An efficient and rapid solvent-free process for the conversion of various aryl amines into aryl bromides and chlorides via in situ formation of arenediazonium tosylate salts under grinding conditions has been developed.







Tandem cyclization of imines and *N*-vinyllactams induced by $TBPA^{+}$ was investigated and a series of 2-methyl-4-anilino-1,2,3,4-tetrahydroquinolines were synthesized based on a domino process in which *N*-vinyllactams serve as an acetaldehyde equivalent. A single electron transfer mechanism was proposed and radical cation salt acts as both a Lewis acid and one electron oxidant to induce such transformation.



The 2,2-difluorobenzodioxole moiety has been proposed in medicinal chemistry research as a potential metabolically more stable derivative of the benzodioxole fragment. Herein we present, to the best of our knowledge, the first synthesis of 4-chloro-2,2-difluoro[1,3]dioxole[4,5-*c*]pyridine, a 5-aza-derivative of the 2,2-difluorobenzodioxole, from simple and cheap starting materials. The chlorine atom in position 4 could be useful for further functionalisation by cross coupling reactions.

*Corresponding author
Supplementary data available via ScienceDirect

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