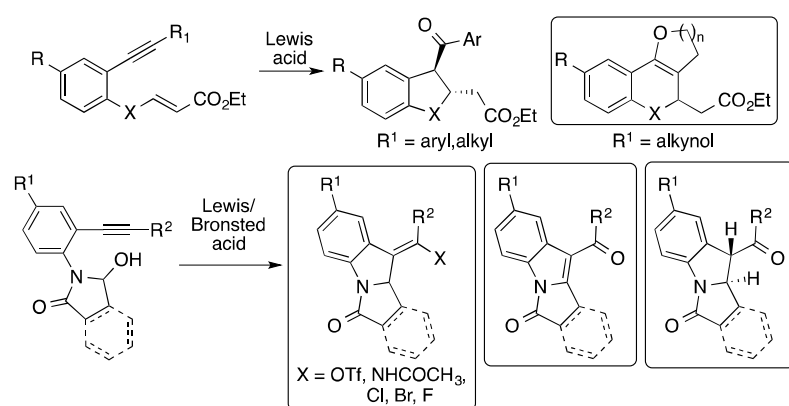


## Stereoselective synthesis of oxa- and aza-cycles using reactions of alkynes

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In recent years, metal catalysed transformations of alkynes have gain prominence for the synthesis of oxa- and aza-cycles. However, their utility under metal free conditions is still under explored. In a programme directed at the stereoselective synthesis of oxa- and aza-cycles using vinylogous carbonates and carbamates, we demonstrated that the oxonium and iminium ion intermediates generated from these functional groups in the presence of Lewis acids can be trapped with alkynes giving stereoselective access to functionalized 2,3-disubstituted dihydrobenzofurans and indoline derivatives. The regioselectivity of alkyne iminium ion cyclization can be reversed using a tethered hydroxy group as nucleophile. Further, we have also developed divergent synthesis of *N*-fused indolydine, indole, and indoline derivatives using alkyne-iminium ion cyclisation. Interestingly, trapping of vinyl cation intermediate generated after alkyne iminium ion cyclisation was found to be dependent on the Lewis/Bronsted acid and solvent used. This talk will highlight some details of these studies.



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