OXONIUM YLIDE MEDIATED SYNTHESIS OF TETRAHYDROOXEPINES

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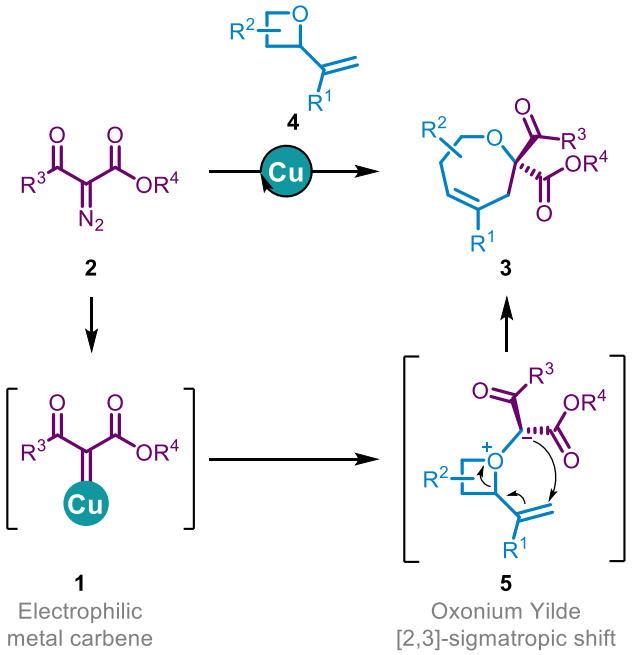
Medium-sized oxacycles are important building blocks present in a large variety of natural and medicinal products.[1] Their synthesis has been investigated over the years and can be achieved *via* cycloaddition, ring-closing metathesis and ring expansion reactions among others.[2] In this context, the propensity of oxonium ylides to undergo ring expansions *via* [1,2]- and/or [2,3]-shifts constitutes an important strategy.[3] To generate the ylide intermediates, decomposition of acceptor diazo reagents under metal-catalyzed conditions is a common synthetic tool; *in-situ* generation of electrophilic metal carbenes **1** and their reactivity with cyclic ethers acting as Lewis bases affording the targeted products.[4]

Herein, with α-diazodiesters and α-diazo-β-ketoesters as reagents **2**, the formation of tetrahydrooxepines **3** was investigated by ring expansion of vinyl oxetanes **4**, using Cu(II) salts as catalysts. The desired 7-membered rings are afforded as major products *via* [2,3]-sigmatropic rearrangements from oxonium ylide intermediates **5**. Further attempts using this strategy to give access to functionalized medium-sized oxacycles will be provided.



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