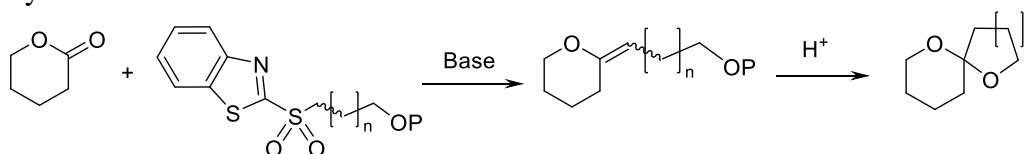


Total synthesis of spiroketal natural products via the Mukaiyama aldol on exocyclic enol ethers

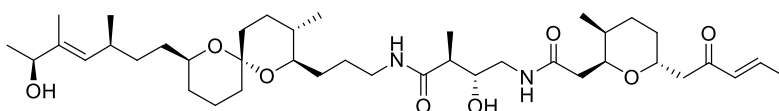
Directors: Dr. David Gueyrard, Pr. Peter Goekjian.

The stereoselective synthesis of exocyclic enol ethers by the extension of the modified Julia Reaction to the synthesis of enol ethers from lactones has been extensively studied in our group.¹ Based on this reaction, we developed an original method to provide spiroketals through an acid catalyzed cyclization of exo-enol ethers.²



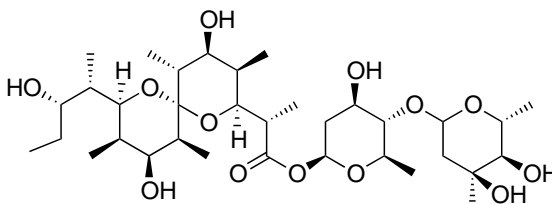
P : acid labile protective group

We applied this methodology for the total synthesis of Bistramide A and others spiroketals isolated from natural sources.³



Bistramide A

An alternative approach involves a stereoselective Mukaiyama aldol reaction, followed by an in situ cyclization, which would allow us to control the two centers adjacent to the spirocyclic carbon. Current studies on the scope, relative diastereoselection, and induction will provide new routes to this essential class of natural products such as the antibiotic Enteridinine A.⁴



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