

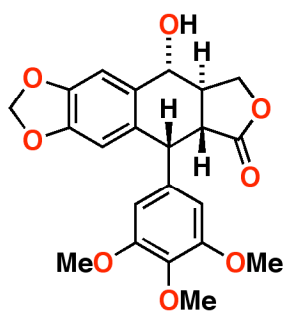
SYNTHESIS INSPIRED BY DOMINO REACTIONS

Michael S. Sherburn

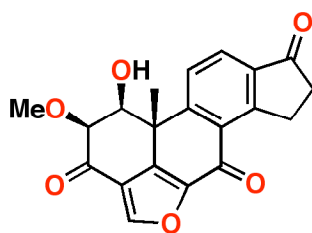
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My group develops new methods to achieve efficient chemical synthesis. We do this by designing new domino sequences, cycloaddition reactions, radical reactions, and metal-catalysed bond forming reactions. We also devise new methods for stereoselective synthesis. We apply these new methods in the total synthesis of bioactive natural products of medicinal importance, in hydrocarbon structures of fundamental importance, and in self-assembly and host-guest chemistry.

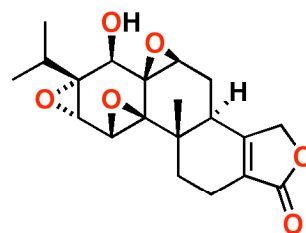
This talk will offer insights into the development of new and efficient methods for the preparation of structurally challenging natural products. Some of these will use fundamental hydrocarbons thought to be too unstable to isolate, as new synthetic building blocks.



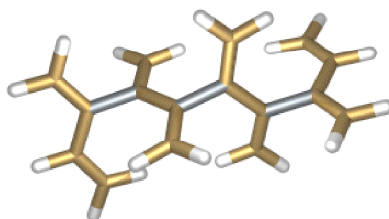
podophyllotoxin



viridin



triptolide



[8]dendralene
a fundamental structure

Representative references:

G. Bojase, A. D. Payne, A. C. Willis, M. S. Sherburn *Angew. Chem. Int. Ed.* **2008**, 47, 910–912; N. A. Miller, A. C. Willis, M. N. Paddon-Row, M. S. Sherburn *Angew. Chem. Int. Ed.* **2007**, 46, 937–940; A. D. Payne, A. C. Willis, M. S. Sherburn *J. Am. Chem. Soc.* **2005**, 127, 12188–12189; E. A. Barrett, J. L. Irwin, A. J. Edwards, M. S. Sherburn, *J. Am. Chem. Soc.* **2004**, 126, 16747–16749; A. J. Reynolds, A. J. Scott, C. I. Turner, M. S. Sherburn, *J. Am. Chem. Soc.* **2003**, 125, 12108–12109.