SL07 **Synthesis of Bioactive Natural Products—A Catalysis Frontier**

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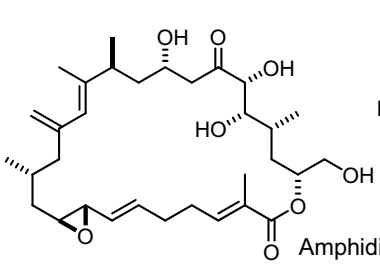
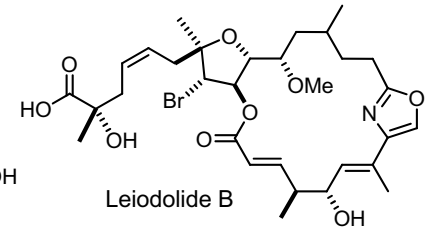
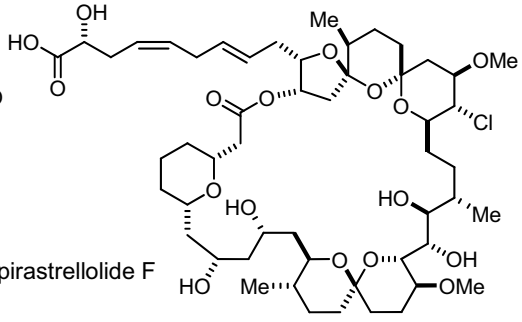
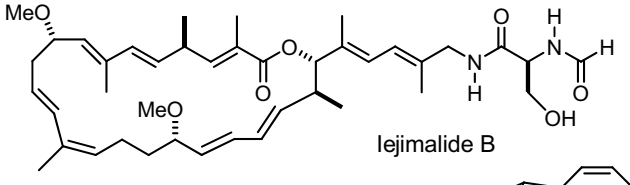
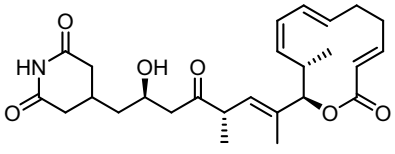
This lecture will provide an up-date on our ongoing programs concerning the total synthesis and evaluation of complex natural products of biological significance. All approaches heavily rely on homogeneous catalysis and are designed such that they allow us to explore the scope and limitations of the methodology developed in our laboratory (ring closing alkene- and alkyne metathesis, gold- and platinum catalysis, cross coupling reactions). Targets of current interest include the highly cytotoxic polyene iejimalide [1], various members of the amphidinolide series [2], the potent phosphatase inhibitor spirastellolide [3-5], the metalloproteinase inhibitor berkelic acid [6], the structurally unusual marine prostanoid hybridalactone [7], the cytotoxic macrolides tulearin C [8] and leiodolide B [9], as well as the cell-migration inhibitor lactimidomycin [10,11].

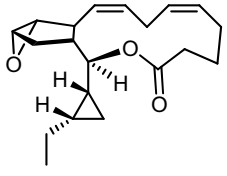

Amphidinolide H

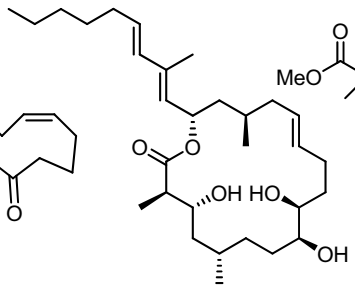

Leiodolide B

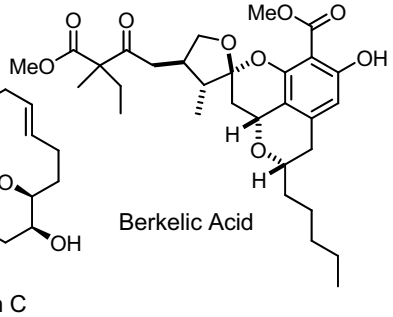

Spirastrellolide F


Iejimalide B


Lactimidomycin


Hybridalactone (-)-(**1**)


Tulearin C


Berkelic Acid

Selected references: [1] J. Gagnepain, E. Moulin, A. Fürstner, *Chem. Eur. J*. **2011**, *17*, 6964; [2] A. Fürstner, *Isr. J. Chem*. **2011**, *51*, 329; [3] G. W. O'Neil, J. Ceccon, S. Benson, M.-P. Collin, B. Fasching, A. Fürstner, *Angew. Chem. Int. Ed*. **2009**, *48*, 9940; [4] S. Benson, M.-P. Collin, G. W. O'Neil, J. Ceccon, B. Fasching, M. D. B. Fenster, C. Godbout, K. Radkowski, R. Goddard, A. Fürstner, *Angew. Chem. Int. Ed*. **2009**, *48*, 9946; [5] S. Benson, M.-P. Collin, A. Arlt, B. Gabor, R. Goddard, A. Fürstner, *Angew. Chem. Int. Ed*. **2011**, *50*, 8739; [6] T. N. Snaddon, P. Buchgraber, S. Schulthoff, C. Wirtz, R. Mynott, A. Fürstner, *Chem. Eur. J*. **2010**, *16*, 12133; [7] V. Hickmann, A. Kondoh, B. Gabor, M. Alcarazo, A. Fürstner, *J. Am. Chem. Soc*. **2011**, *133*, 13471; [8] K. Lehr, R. Mariz, L. Leseurre, B. Gabor, A. Fürstner, *Angew. Chem. Int. Ed*. **2011**, in press; [9] A. Larivée, J. B. Unger, M. Thomas, C. Wirtz, C. Bubost, S. Handa, A. Fürstner, *Angew. Chem. Int. Ed*. **2011**, *50*, 304; [10] K. Micoine, A. Fürstner, *J. Am. Chem. Soc*. **2010**, *132*, 14064; [11] D. Gallenkamp, A. Fürstner, *J. Am. Chem. Soc*. **2011**, *133*, 9232.