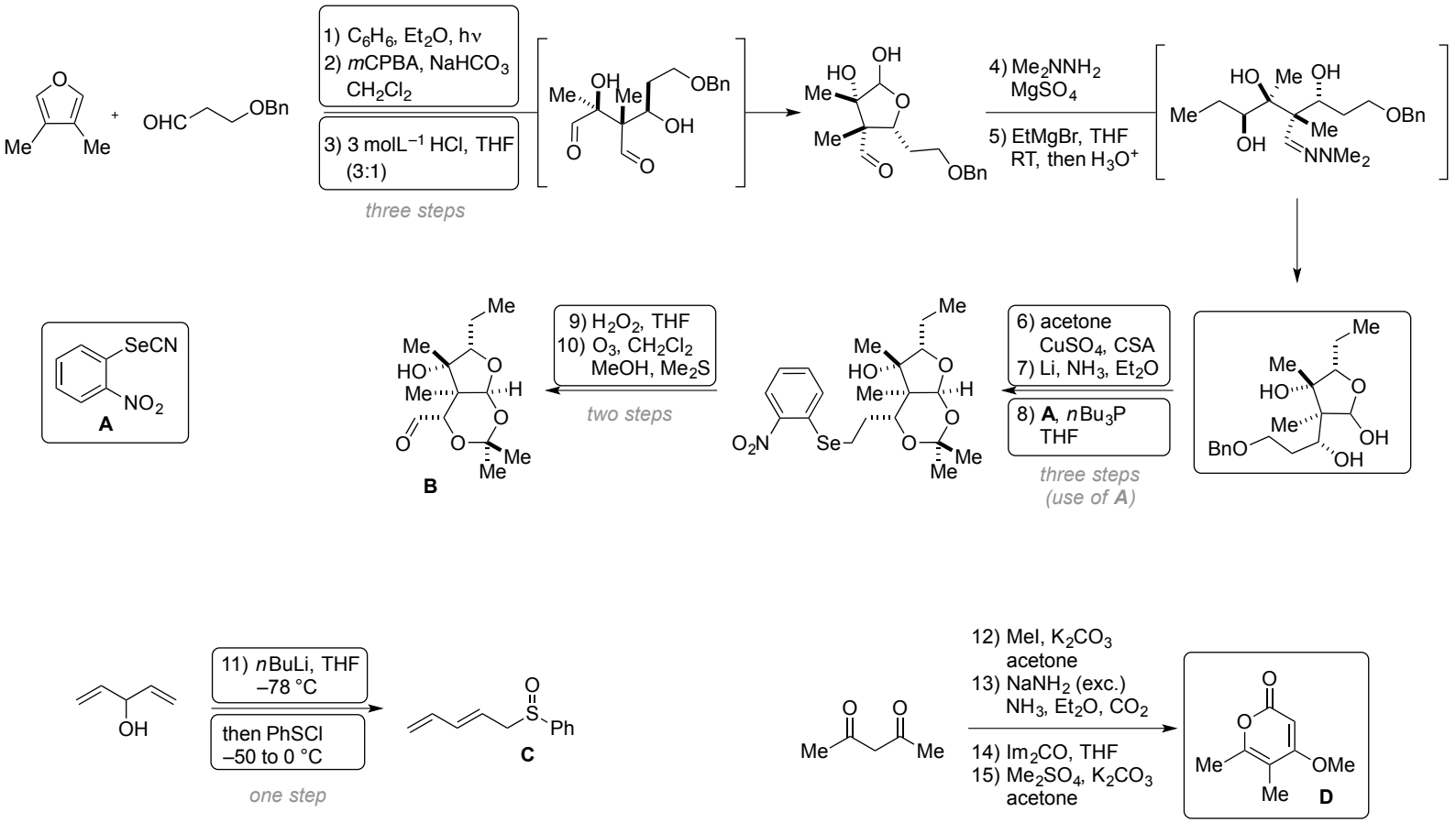
E29: Total Synthesis of (±)-Asteltoxin [1-3]

Keywords: Grieco Dehydroxylation • Paterno-Büchi • Pummerer rearrangement • [2,3]-sigmatropic rearrangements

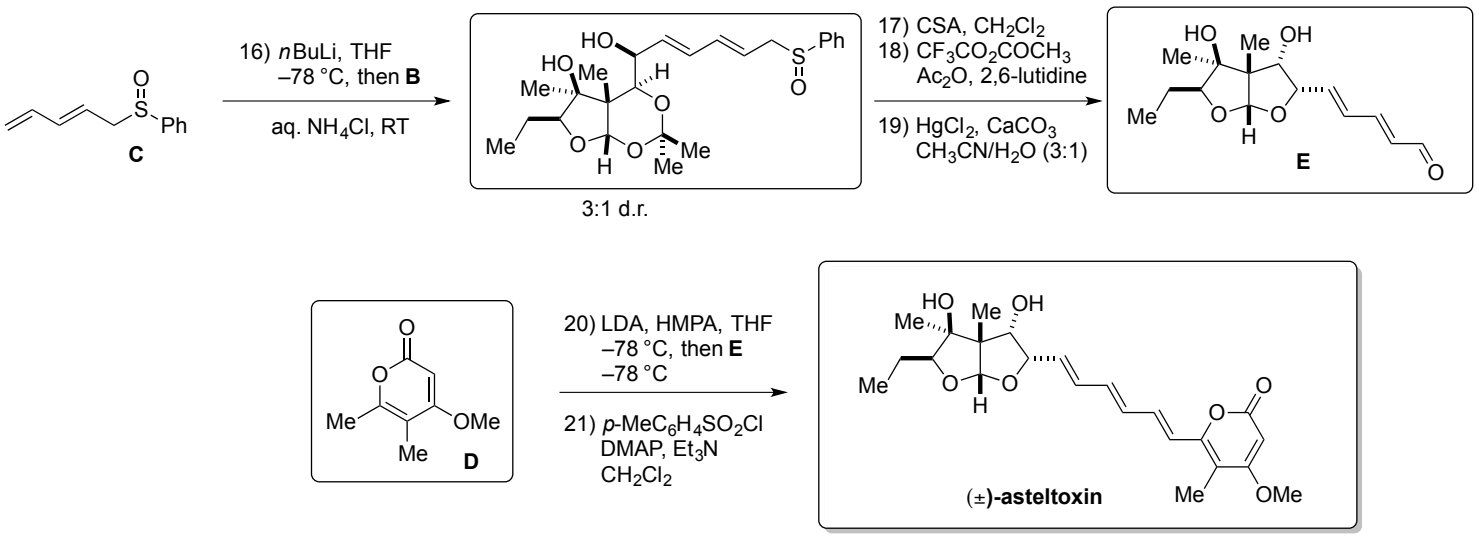


[1] S. L. Schreiber, K. Satake *J. Am. Chem. Soc.*, **1984**, *106*, 4186–4188.
[2] S. L. Schreiber *Science*, **1985**, *227*, 857–863.
[3] K. C. Nicolaou, E. J. Sorensen *"Classics in Total Synthesis"* **1996**, *5. Edition*, Wiley-VCH, 317–332.

UNI BASEL

Sparr Group Seminar
17.11.2016
Christian Fischer

E29: Total Synthesis of (±)-Asteltoxin [1-3]



- The mycotoxin was originally isolated by the group of Vleggaar from a toxic fungus *Aspergillus stellatus* Curzi grown on maize
- Studies indicated that the trienic α-pyrone asteltoxin inhibits oxidative phosphorylation, similar as its structural relatives aurovertin and citreoviridin
- The feasibility of the initial reaction of this total synthesis was pioneered by the group of Sakurai in the 60s. The high regio- and diastereoselectivity of this reaction encouraged Schreiber and his group to dramatically extend its utility for the synthesis of diverse, complex natural products (see ref. 2)

[1] S. L. Schreiber, K. Satake *J. Am. Chem. Soc.*, **1984**, *106*, 4186–4188.
[2] S. L. Schreiber *Science*, **1985**, *227*, 857–863.
[3] K. C. Nicolaou, E. J. Sorensen *"Classics in Total Synthesis"* **1996**, *5. Edition*, Wiley-VCH, 317–332.

UNI BASEL

Sparr Group Seminar
17.11.2016
Christian Fischer