Total Synthesis of Myriocin

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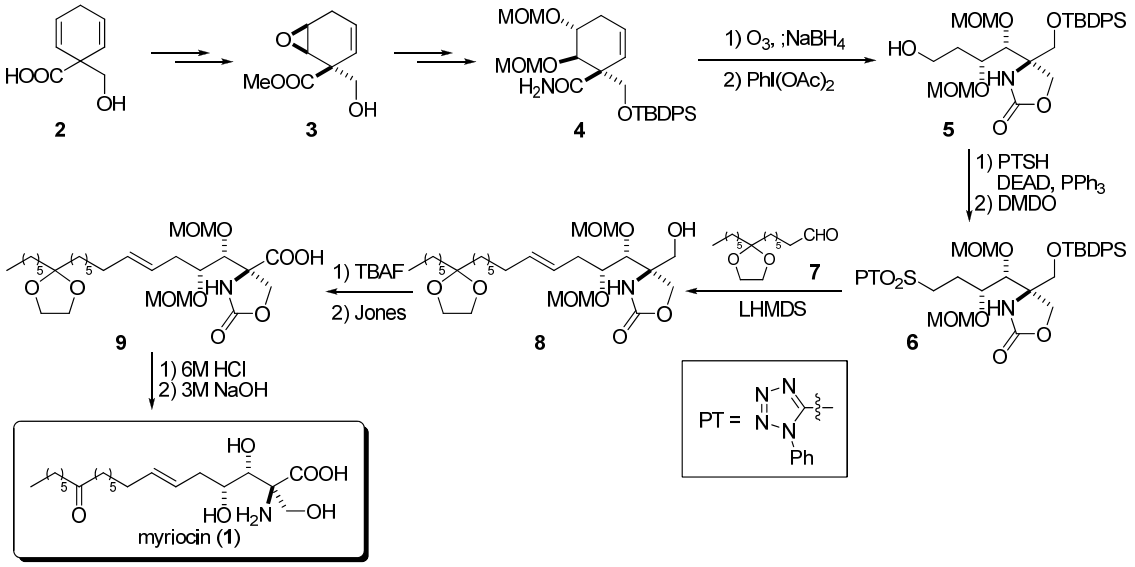
Myriocin (**1**) was isolated as an antifungal principle from *myriococcus albomyces*[1] and *mycelia sterilia*[2] in 1972. This compound was also isolated from the culture broth of *Ialia sinclairii* (Chinese and Japanese name 冬虫夏草) in 1994[3]. Compound **1** exhibited 10- to 100-fold more potent immunosuppressive activity than cyclosporine A. These amazing bioactivities and unique structure have led us to the total synthesis of **1**.

The epoxide **3**, easily prepared from symmetric carboxylic acid **2**, was converted to the amide **4** which possesses three of sequential stereogenic centers of **1**. Conversion of **4** to **5** was carried out by ozonolysis and successive Hofmann rearrangement. Mitsunobu reaction and oxidation with DMDO of **5** afforded key component **6**. Coupling of sulfone **6** by Julia-Kocienski reaction gave (*E*)-alkene **8**. The carboxylic acid **9** was afforded by removal of the TBDPS group and successive Jones oxidation. Finally, deportation of the MOM groups and hydrolysis of the oxazolidinone furnished **1**. The all spectroscopic data for synthetic **1** were fully identical those of natural myriocin.



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