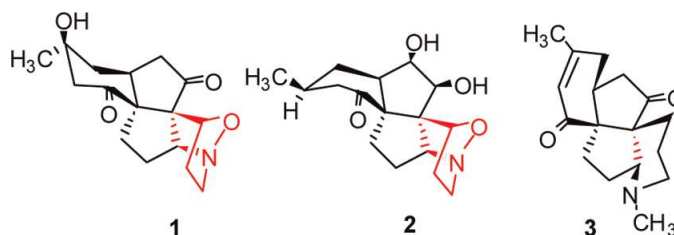


Gravel-Ward Synthetic Challenge #6 August 29, 2013

Total Synthesis of a Lycojaponicumine



The goal of this Challenge is to develop and defend a synthetic strategy for the total synthesis of a member of the lycojaponicumine family. These alkaloids were isolated from *L. japonicum* Thunb., collected in Zhejiang province (Wang *et al. Org. Lett.* **2012**, *14*, 2614-2617). Their structures were determined from spectroscopic analysis and X-ray crystallography. The absolute and relative configurations were established, and enough material was obtained for preliminary biological testing. In other words, obtaining synthetic material is not really useful at this point but it provides a good training in the art of synthesis. You are free to choose any of these three natural products as your target.

Your presentation should consist of a brief retrosynthetic analysis explaining the reasons behind important disconnections, followed by a synthetic plan which details the reagents used and possible protecting groups. As would be the case for a real research proposal, issues of chemo- and diastereoselectivity must be addressed. Your route doesn't have to be enantioselective, but you sure get brownie points if it is. Your synthesis should possess a good balance between originality and feasibility. In this regard, it would be beneficial to briefly show some precedent for the most difficult/uncertain steps in the sequence. Each team's synthesis should take ~30-45 minutes to present.

While this Challenge is not mandatory, all students are strongly encouraged to participate. Students from other groups are also welcome. For this sixth edition of the Challenge, three teams will be composed as follows:

- 1) Myron, Naveen, Thanu
- 2) Pouyan, Sushital, Praveen, Leon
- 3) Steven, Deep, Muxi

Please provide the name of your team to Dr. Gravel prior to Challenge Day.