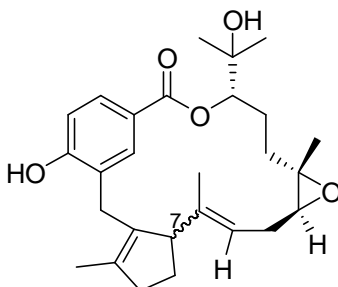


# Gravel-Ward-Majewski Synthetic Challenge #1

## August 26, 2008

### Total Synthesis of Debromophycolide A



Debromophycolide A

The goal of this challenge is to improve and practice your skills in synthetic planning. These skills are an important aspect of any career in organic chemistry and are invaluable during the interview process. It is intended to be a friendly competition between teams consisting of members of different groups.

The goal of the challenge is to develop and defend a synthetic strategy for the total synthesis of debromophycolide A, a diterpene-benzoate macrolactone isolated from the Fijian red alga *Callophycus serratus* (Kubanek *et al. Org. Lett.* **2005**, 7, 5261-5264).

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 of a real research proposal, issues of chemo- and diastereoselectivity must be addressed. A particularly valuable synthesis would allow access to both epimers at C-7, given that the stereochemistry at this centre remains unknown. In addition, an enantioselective synthesis would give you extra brownie points. Finally, 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. The supervisors will determine a 'winning' team and a soon-to-be-much-sought-after trophy will be awarded.

While participation in this exercise is not mandatory, it is strongly encouraged. If you decide to opt out of this history-making event, please inform your supervisor as soon as possible. Undergraduate students are welcome to participate and they may join any team they wish. As you will quickly realize, developing a detailed synthetic plan takes time; don't wait until the last week to attack the problem. Good Luck!

Team #1: Sandip, Eduardo, Khalil, Nikki

Team #2: Garrison, Fabiola, Karen

Team #3: Nagarjuna, Pooyan, Li, Pramod