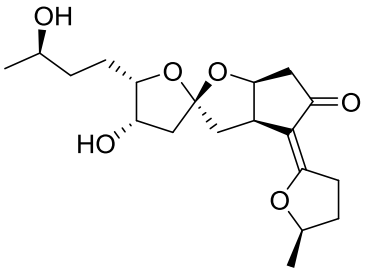
Synthetic Challenge #9
August 18, 2016

Total Synthesis of Opaliferin



The goal of this Challenge is to develop and defend a synthetic strategy for the total synthesis of opaliferin. This polyketide was isolated from the fungus *Cordyceps* sp. NBRC 106954 (Grudniewska *et al. Org. Lett.* **2014**, *16,* 4695-4697). Its structure and relative configuration was determined 1D and 2D NMR analysis, and ultimately X-ray cristallography. The absolute configuration was established by anomalous dispersion effects in X-ray diffraction measurements. No interesting biological activity has been reported yet. Total synthesis of this compound should be fun and mildly challenging and that should be enough of a justification!

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. You route doesn't have to be enantioselective, but it would be extra special if it was. 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 minutes to present.

Your team has to consist of members of at least two research groups. Please provide the name of your team and a list of team members to Dr. Gravel or Dr. Ward at your earliest convenience.