



Chemistry and Biochemistry

Spring 2022 Seminar

Please join us for the following seminar!

Speaker:



Tabitha Schempp
Ph.D. student

When:

Friday, April 22
1 p.m.

Where:

Glenn Hall 314

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Total Synthesis of Acetyl-CoA Carboxylase Inhibitor Soraphen A

Isolated in 1985 from the myxobacterium *Sorangium Cellulosum*, the type 1 polyketide soraphen A is a nanomolar allosteric inhibitor of Acetyl-CoA carboxylase and has potent antifungal and antitumor properties. Soraphen A's structure incorporates an unsaturated 18-membered lactone ring, an extra cyclic phenyl ring, and ten stereocenters. The present synthetic route of soraphen A was completed in 11 steps (LLS), less than half the previously required steps. The synthesis maximizes convergency by utilizing five asymmetric processes and four carbon-carbon formations. A key strategic element involves the development of a new synthetic method; a palladium-AntPhos catalyzed diastereoselective reduction of an allylic carbonate to reveal a terminal olefin for successive olefin cross-metathesis.

