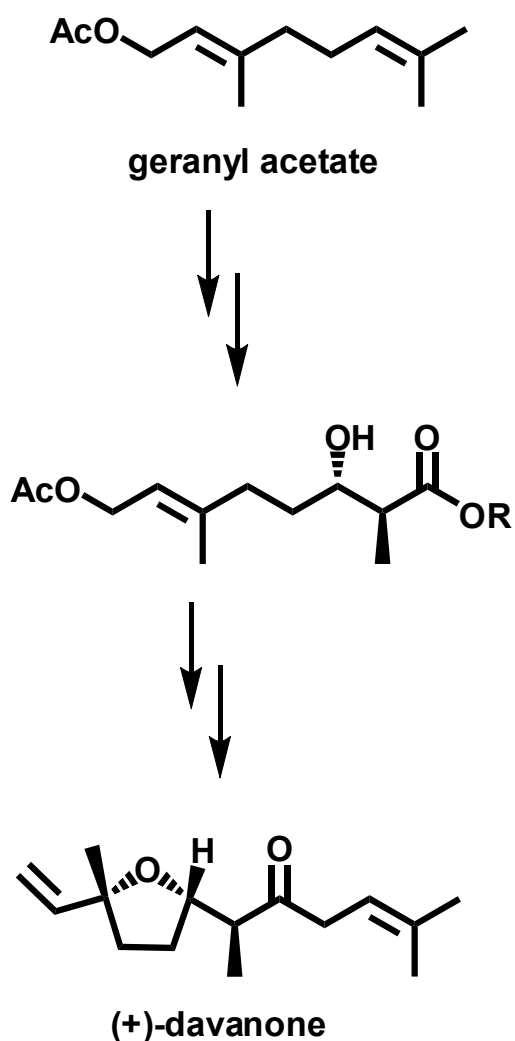


Progress Towards a Biomimetic, Concise Synthesis of (+)-Davanone

Karen C. Brown and Prof. David A. Vosburg



(+)-Davanone is a natural product produced by the plant *Artemisia pallens* with spasmolytic and antifungal properties. Previous syntheses have either been long (24 steps) or racemic (10 steps). Our synthesis focuses on two key steps, an *anti*-aldol reaction and a biomimetic cyclization, to establish the chiral centers and result in a six-step synthesis.

Model systems were used to explore the cyclization and formation of the *cis*-substituted ring. A wide screening of solvents, chiral ligands, and chiral leaving groups revealed an inherent preference to form the *trans* ring.

Work on the *anti*-aldol reaction suggests that this approach is not ideal for our substrate, as it results in low yields and cannot be converted for further synthetic use. Future research will access the same functionality through an epoxide ring opening.

Funding: Pfizer,
Dreyfus Foundation