UCLA Chemistry & Biochemistry

Organic Colloquium

presenting

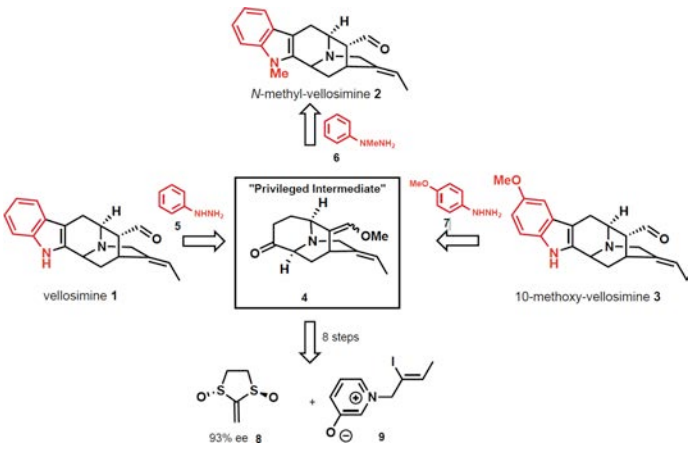
Professor Tanja Gaich

Department of Chemistry
Universität Konstanz, Germany

"A Generalized Approach to Sarpagine Alkaloids"

Abstract. Sarpagine alkaloids comprise a large family of natural products consisting of more than 90 individual congeners. A generalized synthetic access to sarpagine alkaloids via a joint-synthetic sequence has been accomplished. Its applicability is showcased by the enantioselective total syntheses of vellosimine (**1**), *N*-methylvellosimine (**2**), and 10-methoxyvellosimine (**3**). The joint-synthetic sequence is very concise (8 steps) from known compound **8**, and requires no protecting groups**.** The indole heterocycle was introduced in the last step.

This strategy was crucial to access all family members via a shared synthetic route, and led to precursor **4**, which we term "privileged intermediate". Starting from this intermediate, all sarpagines can be synthesized using phenylhydrazines with different substitution patterns (**5**-**7**). Our approach brings about the advantage that synthesis optimization only needs to be carried out once for many natural products. The key features of the synthesis are 1) a [5+2]-cycloaddition, and 2) a ring enlargement.



Wednesday, March 9, 2016

1:00 PM

Cram Conference Room – 3440 Molecular Sciences Bldg

For further information, contact David Gingrich at gingrich@chem.ucla.edu