

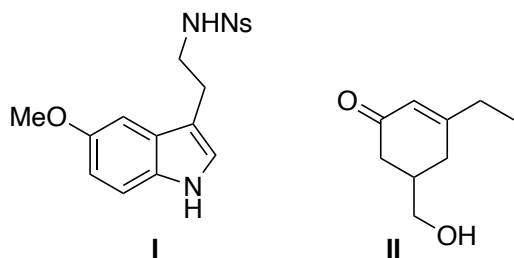
## Synthesis Challenge 108

AG Wegner

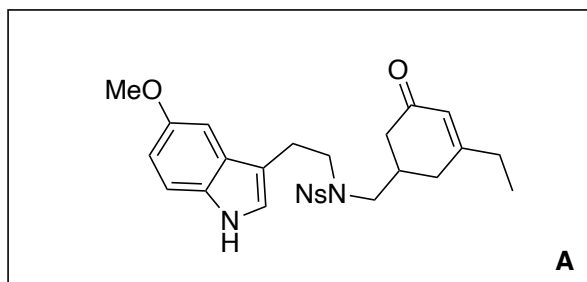
Total Synthesis of Ervaoffine J and K

A. J. Hughes, S. D. Townsend, *Chem. Eur. J.* **2024**, *30*, e202303985

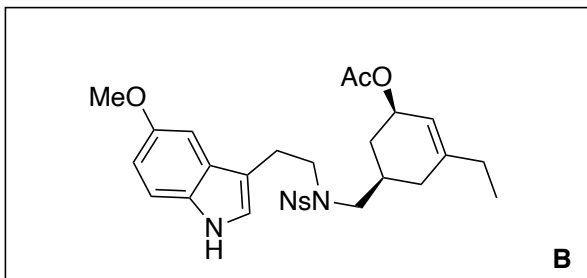
04.04.2024



1



2-3



1) DIAD, PPh<sub>3</sub>

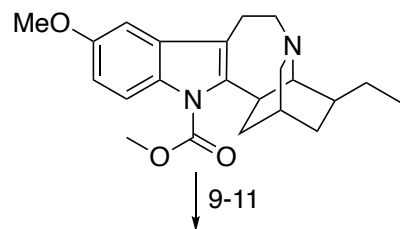
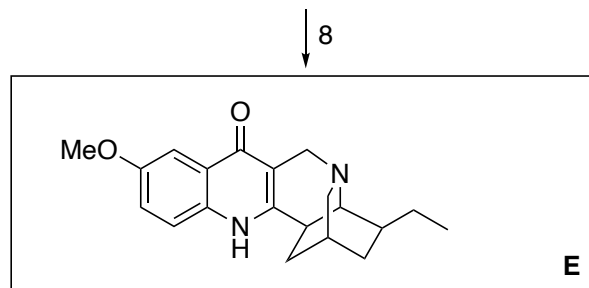
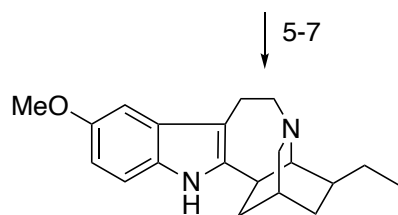
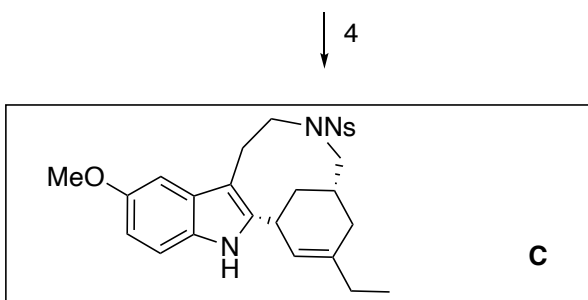
2) NaBH<sub>4</sub>, CeCl<sub>3</sub>  
3) Ac<sub>2</sub>O, DMAP

Please, provide a synthesis of **I** and **II**.

DIAD = Diisopropyl azodicarboxylate

**Mitsunobu reaction**

**Luche reduction**



4)  $\text{Mg}(\text{ClO}_4)_2$ , CSA

5)  $\text{BH}_3 \cdot \text{SMe}_2$ , NaOH,  $\text{H}_2\text{O}_2$   
 6) MsCl, DMAP  
 7)  $\text{HSCH}_2\text{CO}_2\text{H}$ , DBU

8) KOtBu,  $\text{O}_2$

9)  $\text{TMSCF}_2\text{Br}$ ,  $\text{NH}_4\text{OAc}$ , then AgOAc  
 10)  $\text{NH}_2\text{NH}_2 \cdot \text{H}_2\text{O}$ ,  $\text{NH}_4\text{I}$   
 11)  $\text{Cp}_2\text{ZrHCl}$

CSA = Camphor sulphonic acid

**Friedel-Crafts alkylation**

**Hydroboration**

**Winterfeldt oxidation**

H. Lim, S. Deong, Y. Kim, S. Seo, S. Han, *J. Am Chem. Soc.* **2021**, *143*, 19966.

Please, provide a beautiful 3D-drawing of the final product **F**!