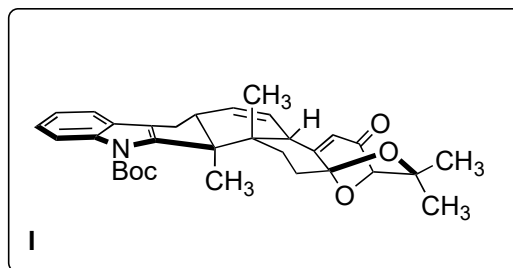


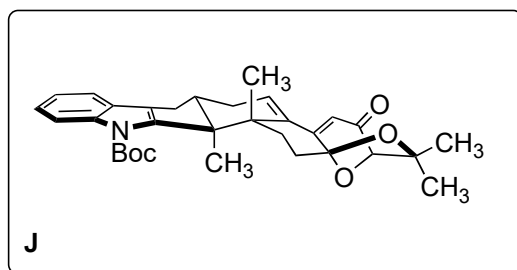
16) CeBr<sub>3</sub> (cat.), H<sub>2</sub>O<sub>2</sub>  
then CuSO<sub>4</sub>, *p*-TSA

**75%**  
Mechanism?

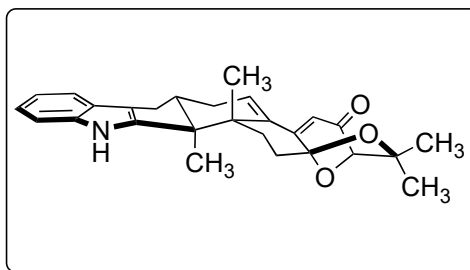


17) RhCl(PPh<sub>3</sub>)<sub>3</sub>, H<sub>2</sub>, toluene, **92%**

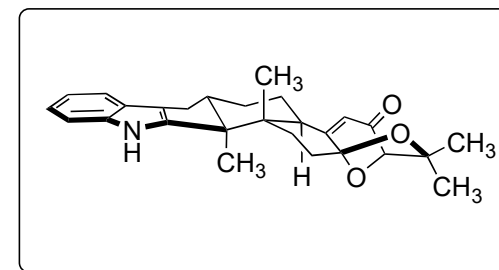
18) TBSOTf, NEt<sub>3</sub> **58%** (2 steps)  
19) PhSeCl; H<sub>2</sub>O<sub>2</sub>



20) SiO<sub>2</sub>,  
90 °C  
**73%**



21) Lindlar,  
then  
DDQ  
**28%**



22) SeO<sub>2</sub>  
**30%**

