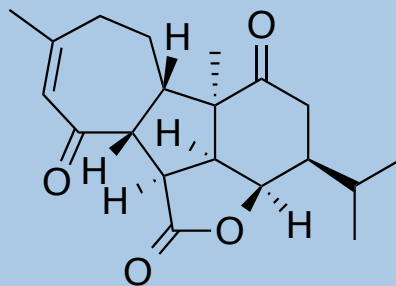


Enantioselective Total Synthesis of (-)-Pavidolide B

Zhang, P.-P.; Yan, Z.-M.; Li, Y.-H.; Gong, J.-X.; Yang, Z. *J. Am. Chem. Soc.* **2017**.ASAP

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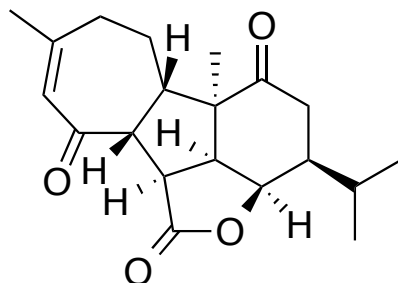


Zhen Yang

- > Ph.D. at The Chinese University of Hong Kong with Prof. Henry N. C. Wong in 1992
- > Postdoc with Prof. K.C. Nicolaou and then Assistant professor at The Scripps Research Institute
- > Professor in Peking University since 2002
- > Research interest: Total synthesis of natural products

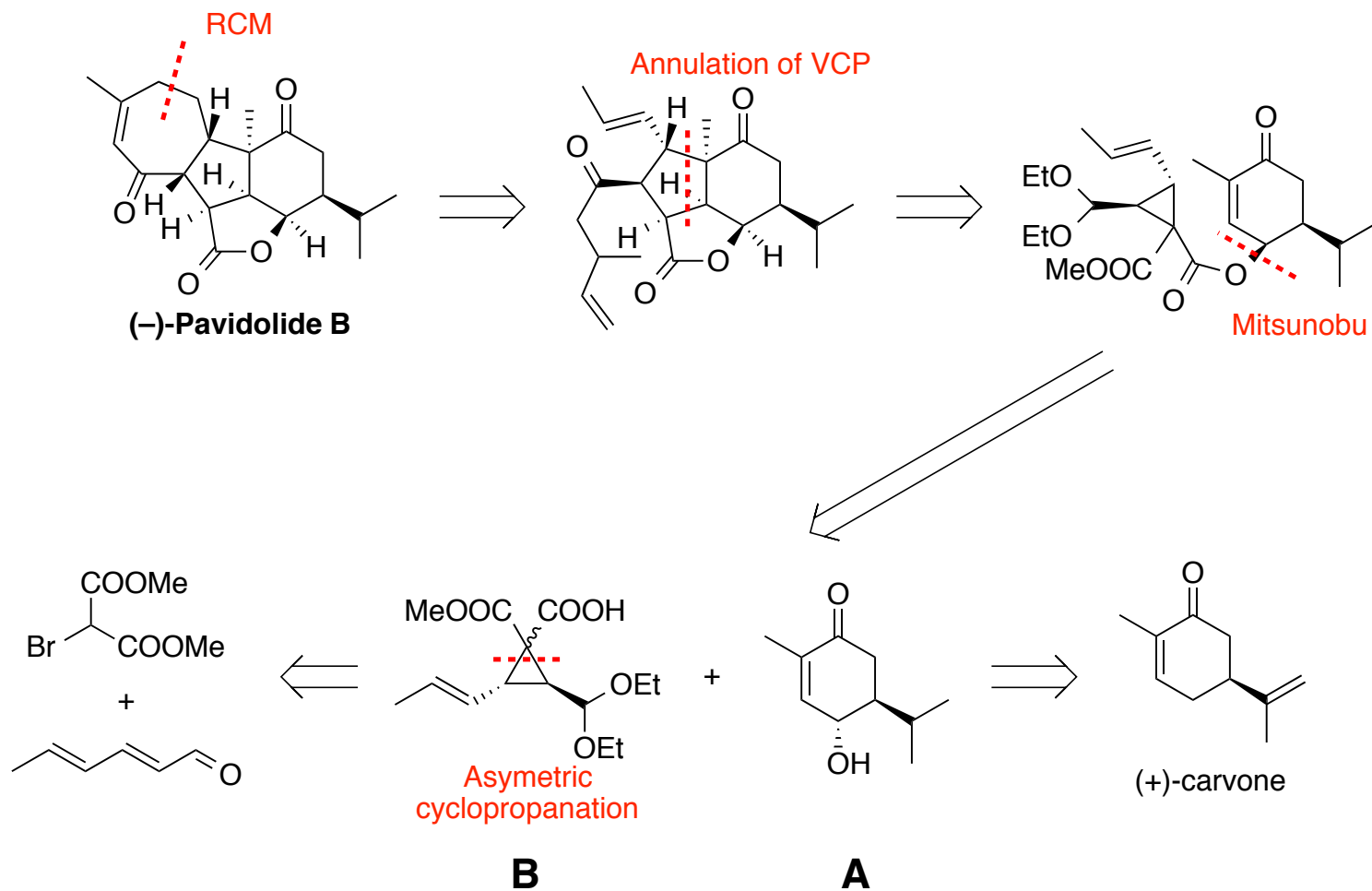


Introduction

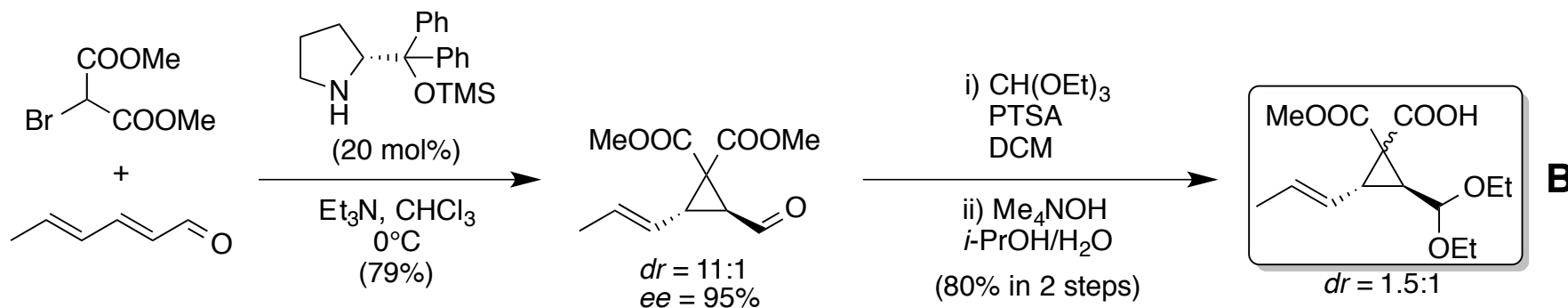
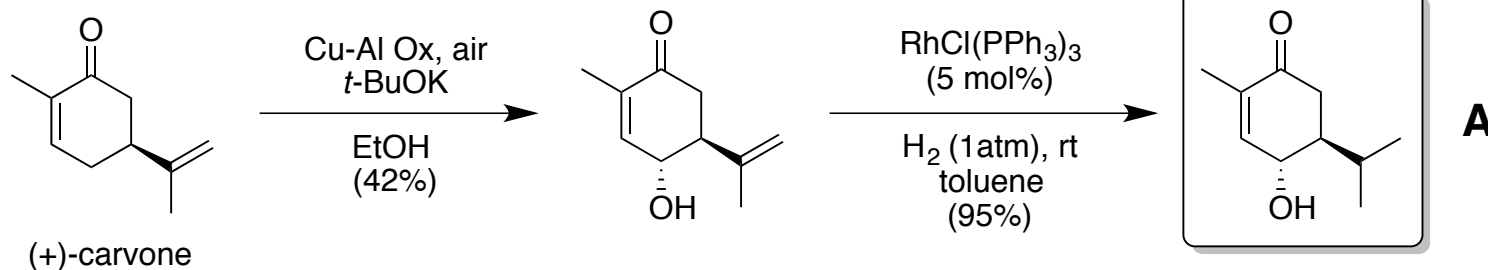


- > Tetracyclic diterpenoid isolated from a coral (*Sinularia pavid*)
- > High selective inhibitory activity against a number of human promyelocytic leukemia cell lines

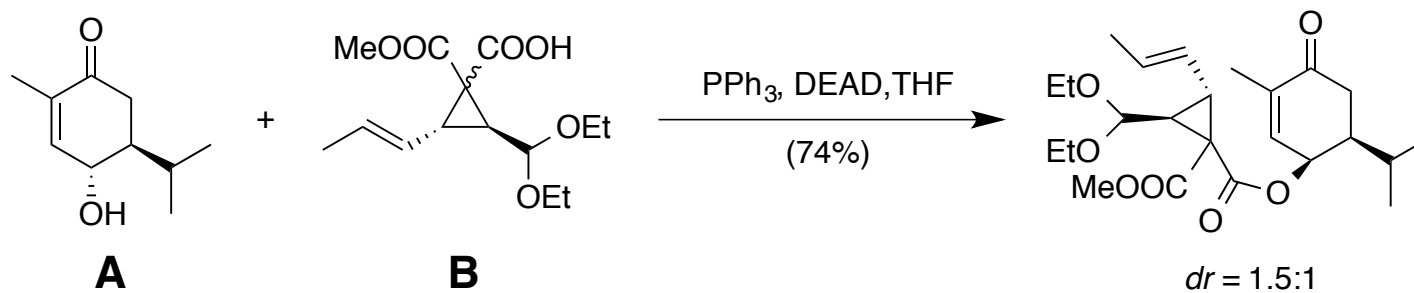
Retrosynthetic Approach



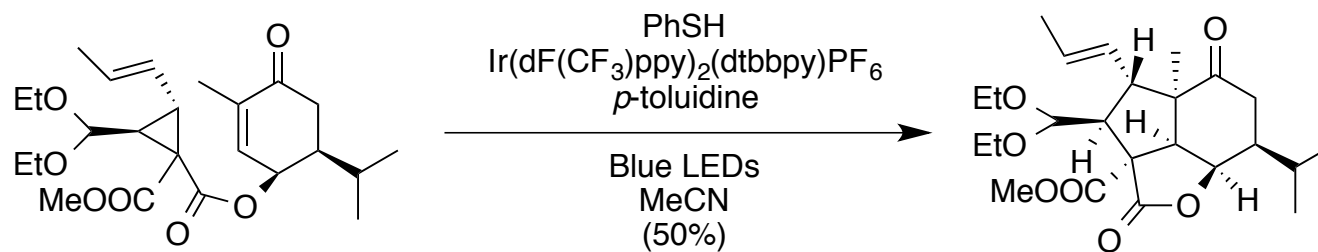
Preparation of the Intermediates A and B



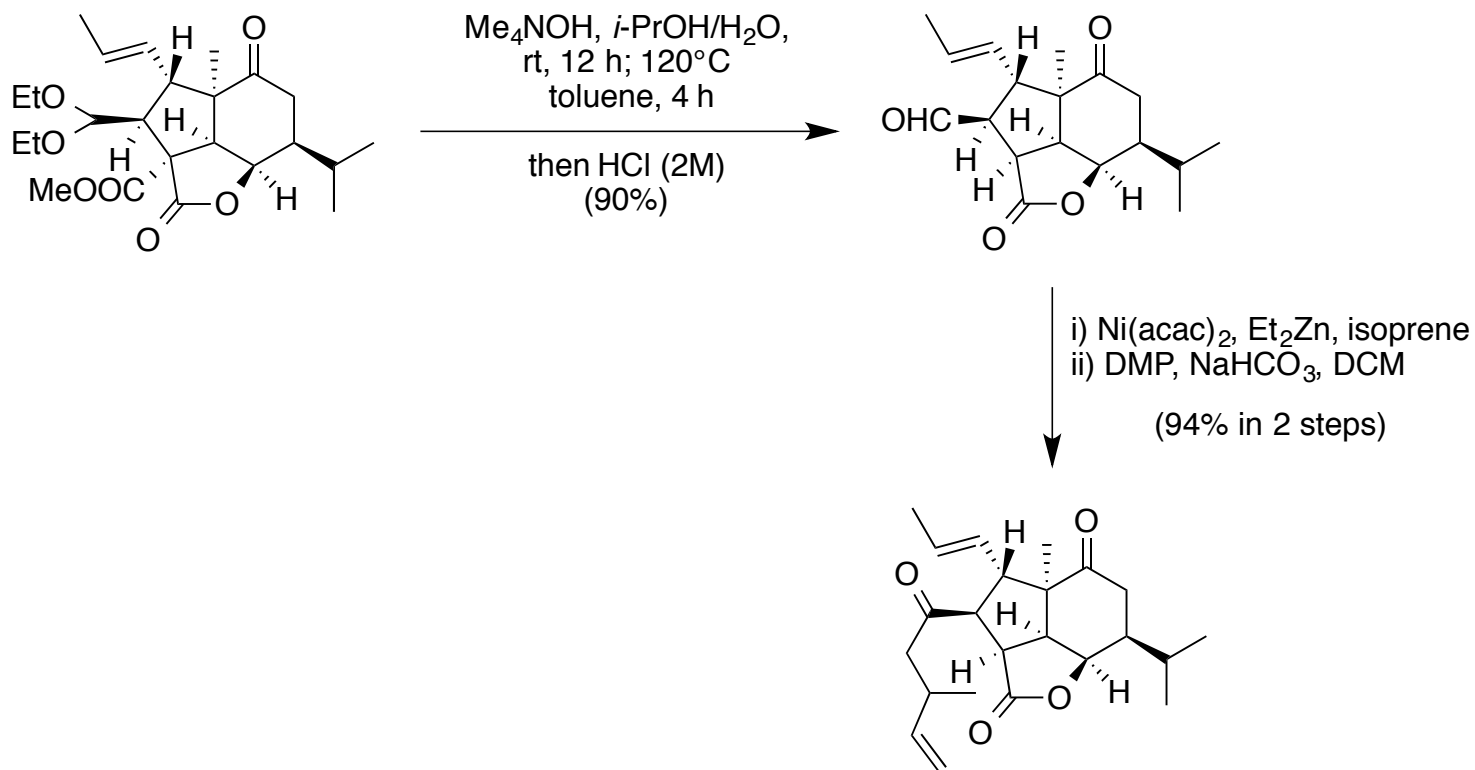
Preparation of the Key Intermediate



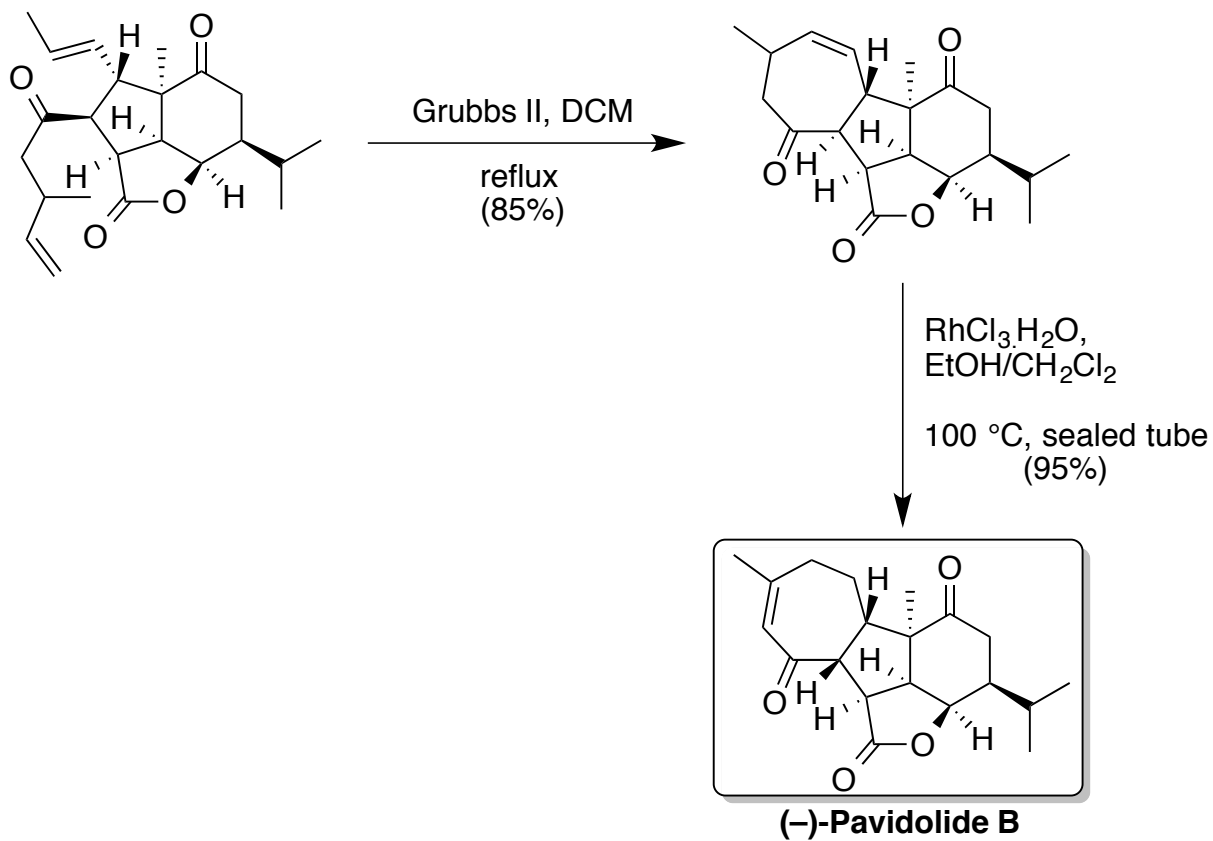
Radical Annulation of VCP



End Game



End Game

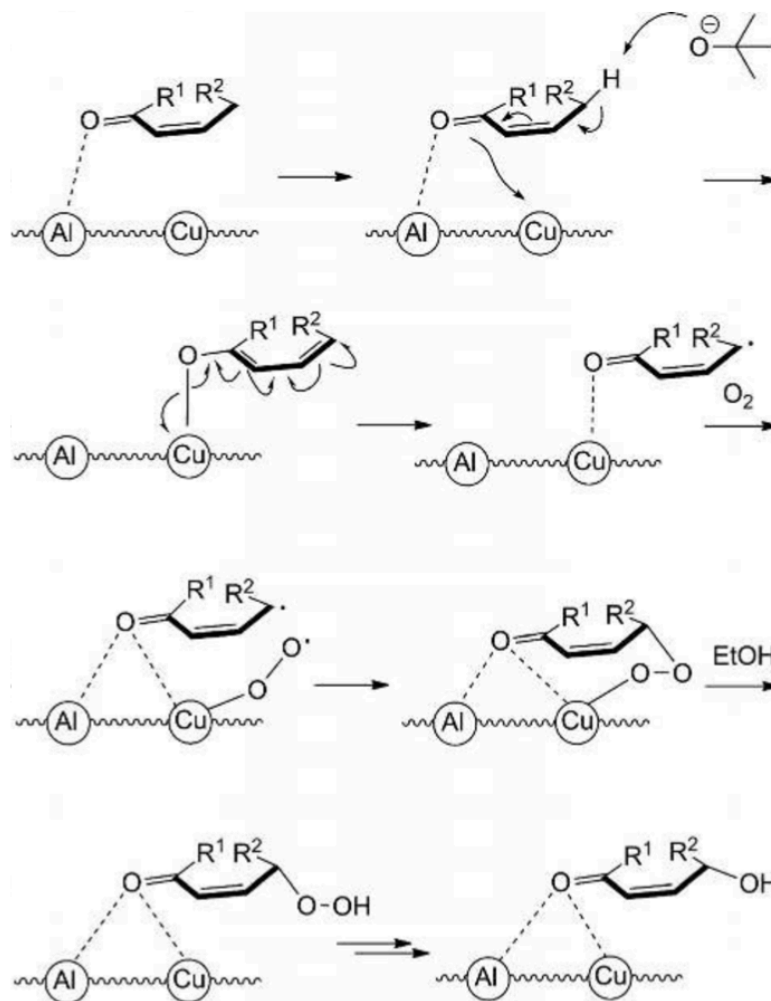


Conclusion

- > 10 linear steps enantioselective synthesis of Pavidolide B
- > Key steps: Asymmetric Cyclopropanation and Radical Annulation

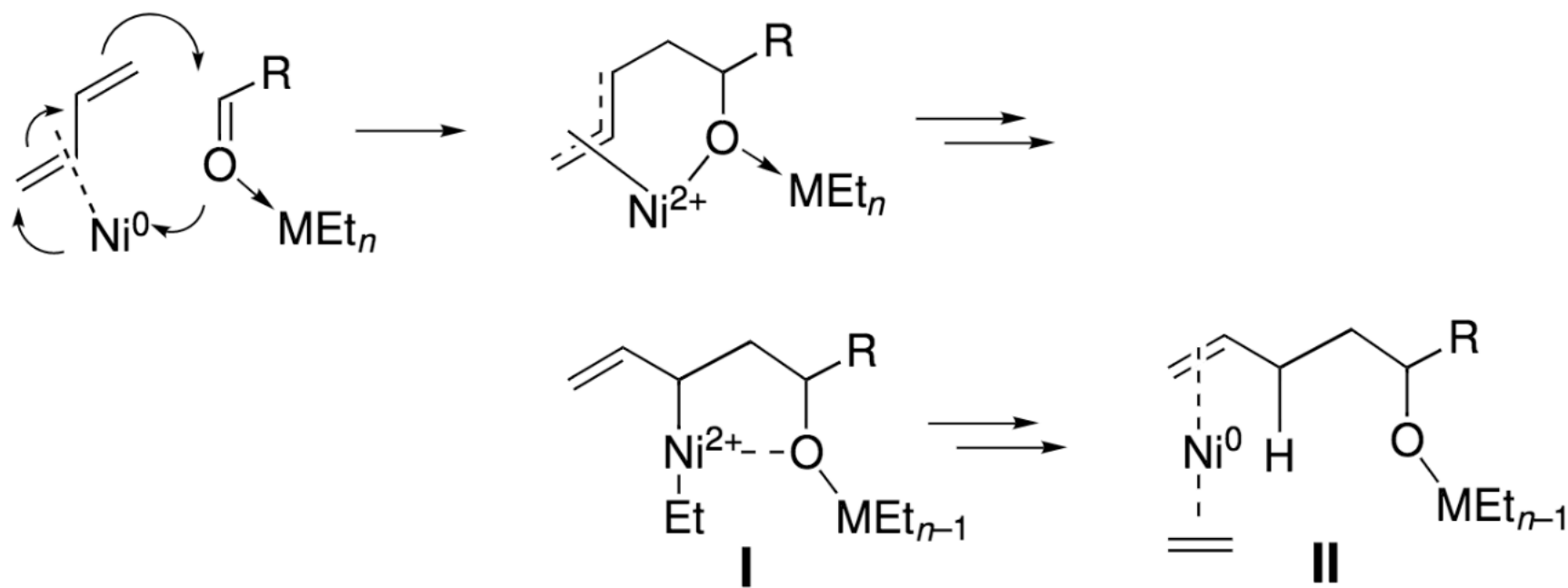
Thank you for your attention

Cu-Al oxidation



Scheme 3. Proposed mechanism for the oxidation of unsaturated enones with Cu-Al Ox, *t*BuOK, and O₂.

Nickel coupling



Michael addition, alkylation

