

The Chemistry of Aldehydes & Ketones

February 17, 2020

- The Wittig reaction and the Horner-Emmons Reaction.
- Spectroscopic Properties of Aldehydes and Ketones.
- Problem Solving.

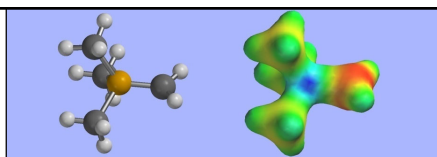
110b Teaching Fellows: Felipe Becerril, Christina Beck, Isabelle Cheng, Junha Gu, Nathalie Hong, Shy Lavasani, Allison Liu, Casey Morrison, Jerusalem Nerayo, Eric Tang, Baili Zhong, Martín Acosta Parra.

Chemistry Seminar! Prof. Kate Freeman, Penn State University, "Wildfires and Upheavals in the Cenozoic." Tuesday, February 18, 11:00 am, Seaver North Auditorium.

O'Leary office hours: T/Th 9:30-10:00 am, SN 208.

O'Leary's evening review session: Wednesdays 7:00 PM, SN Aud. **Course website:** <http://pages.pomona.edu/~djo04747/110/>

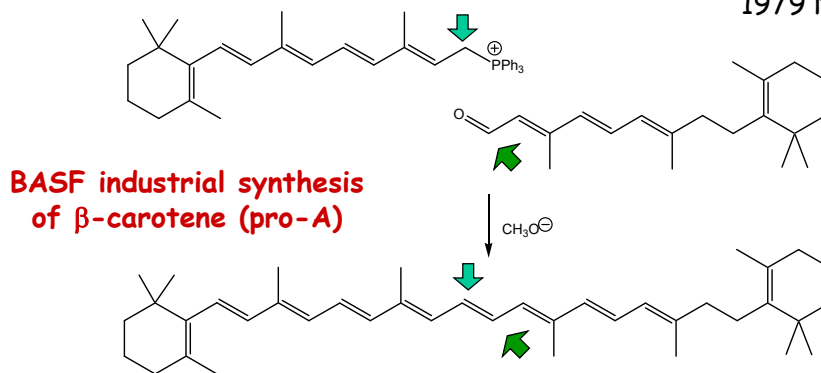
Suggested Problems for Exam 2. 10e: 16.20, 24, 30, 33, 35, 41, 44, 45, 47. 11e: 16.23, 27, 33, 36, 38, 44, 47, 48, 50. 10e/11e: 17.20, 17.28, 17.31, 17.33, 17.35, 17.38, 17.41, 17.42, 17.47.



EPS of model ylide & resonance structures.

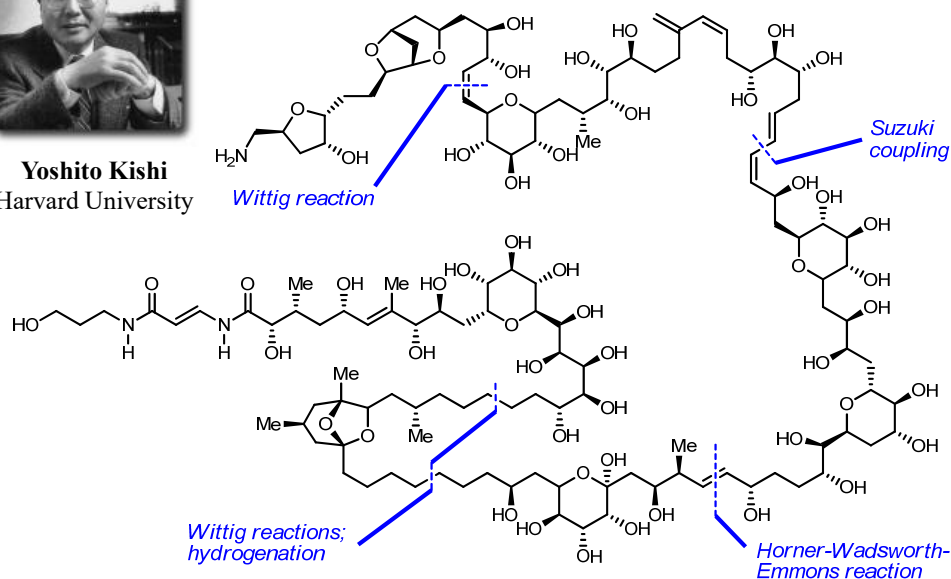


Georg Wittig
(1897-1987)
1979 Nobel Prize





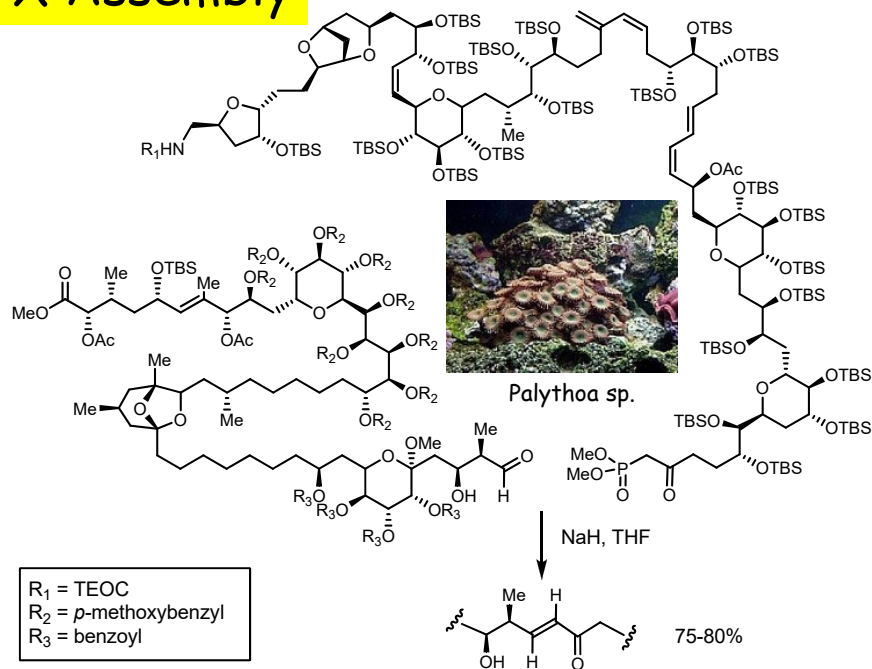
Yoshito Kishi
Harvard University



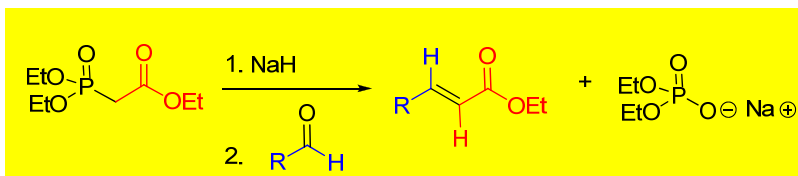
Palytoxin (PTX)

Total synthesis: 1994 (Kishi)
LD₅₀ (mouse, i.p.): 0.45 µg/kg

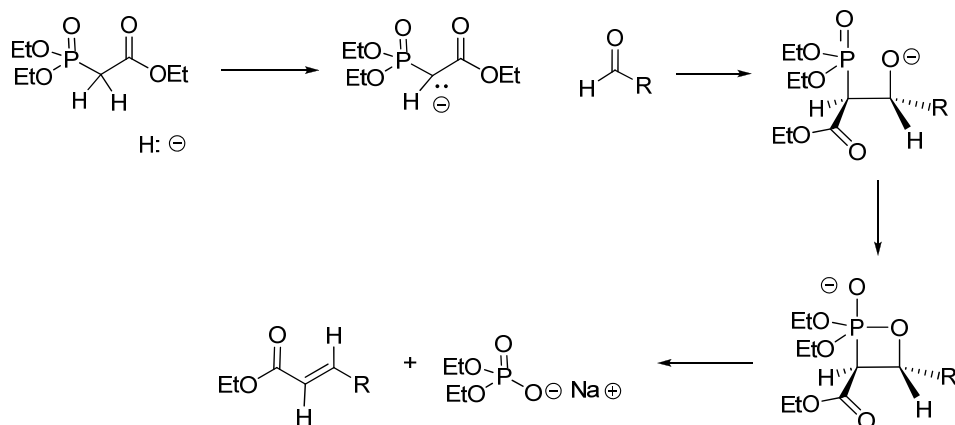
PTX Assembly



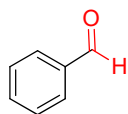
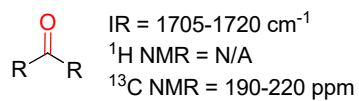
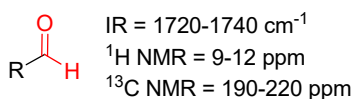
Mechanism of the Horner-Wadsworth-Emmons Reaction



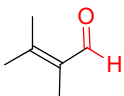
Mechanism:



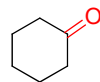
Aldehydes and Ketones: Spectroscopic Data



IR = 1695-1715 cm^{-1}



IR = 1680-1690 cm^{-1}



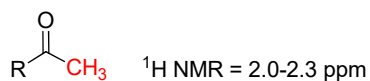
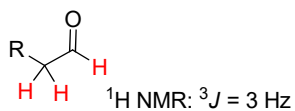
IR = 1715



1751



1785 cm^{-1}



<http://www.youtube.com/watch?v=oKETXMWtkBE>

Chemical Test: Tollen's Silver Mirror

