

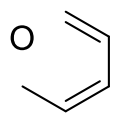
Total Synthesis of the *Cephalotaxus* Norditerpenoids ()-Cephanolides A–D

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J. Am. Chem. Soc. **2021**, *143*, 2710 - 2715.

The larger family of *Cephalotaxus* diterpenoids have shown a broad range of bioactivity that includes plant growth inhibition as well as antineoplastic, antiviral, and antitumor properties.

Construction of the carbon framework through:
iterative $\text{C}-\text{C}$ -coupling,
intramolecular inverse-
cycloaddition,
strategic late-stage oxidations,
facilitated

Retrosynthesis

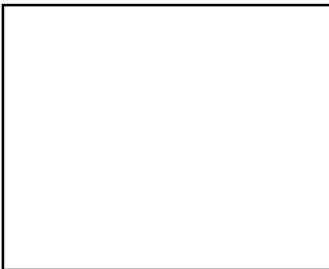






Mukaiyama hydration, then base elimination

Olefination using a modified protocol

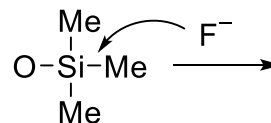


(7) Pd/C, H₂
→

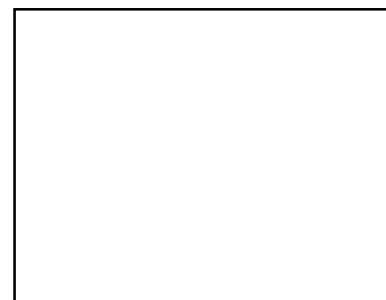
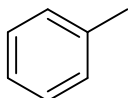
Heterogeneous Pd-catalyzed hydrogenation

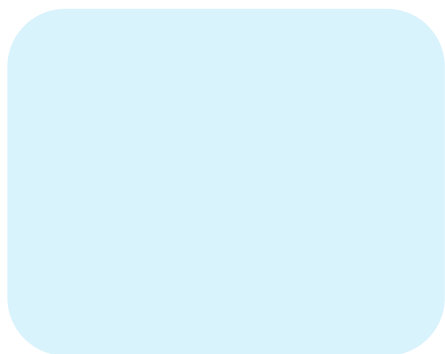
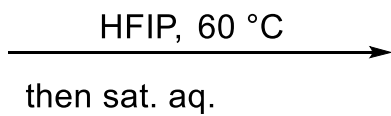
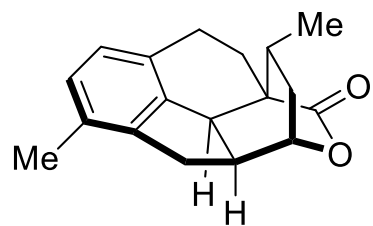


Silyl deprotection with fluoride

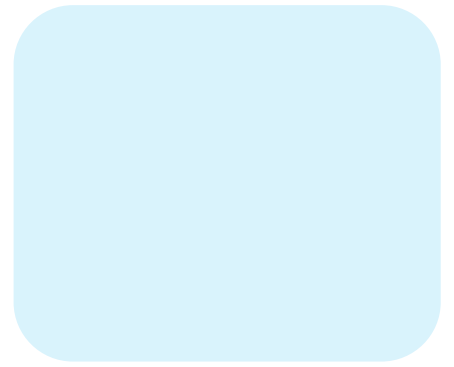


Ionic deoxygenation



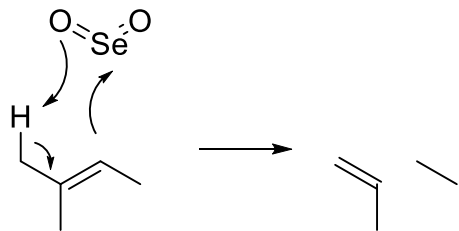


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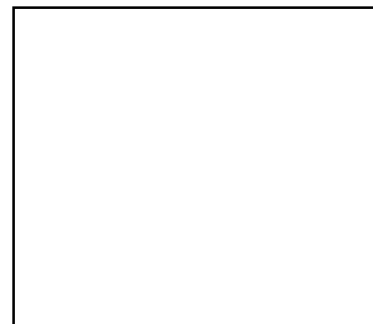
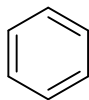


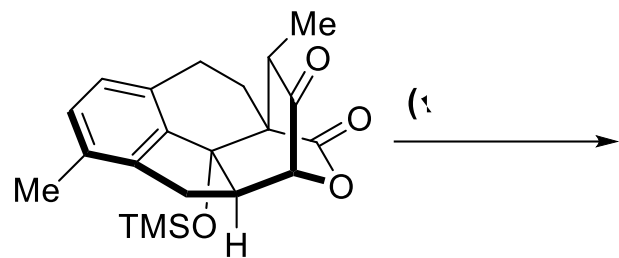
Oxime-directed arene acetylation

Allylic oxidation with selenium dioxide

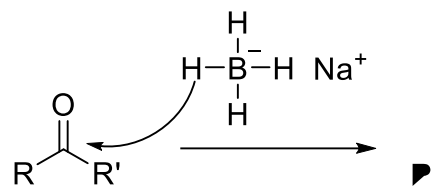


Dess-Martin Oxidation

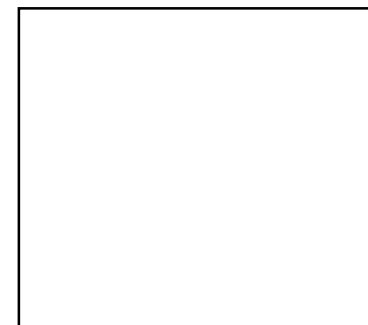
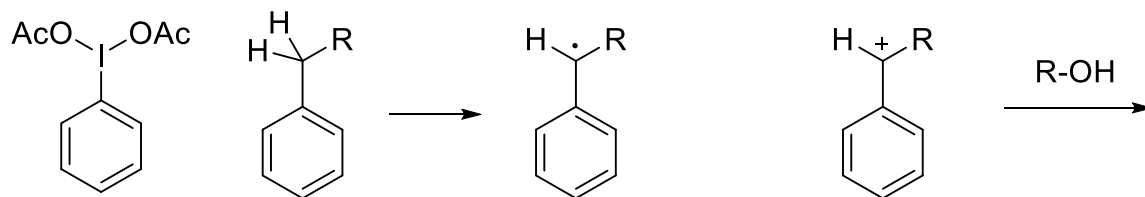


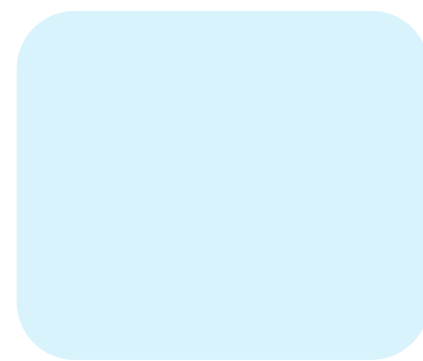


Ketone reduction with sodium borohydride



Intramolecular benzylic oxidation





Formation of xanthate ester

Barton-McCombie deoxygenation

