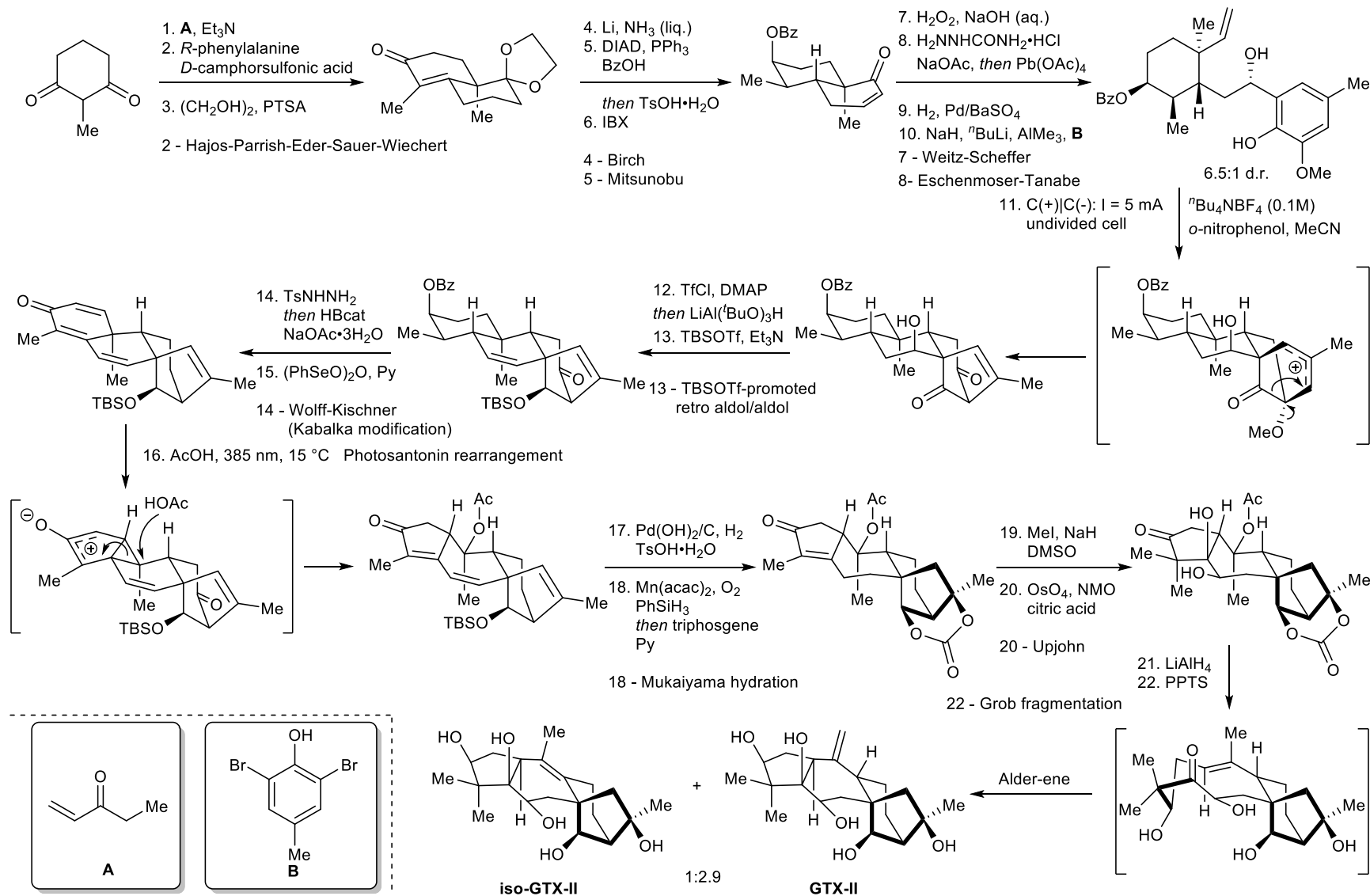
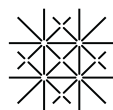


E276: Total synthesis of GTX-II and Auriculatol A



A. Zhu, Y. Lyu, Q. Xia, Y. Wu, D. Tang, C. He, G. Zheng, Y. Feng, Y. Wang, G. Yao and H. Ding, *J. Am. Chem. Soc.*, **2023**, *145*, 8540–8549.

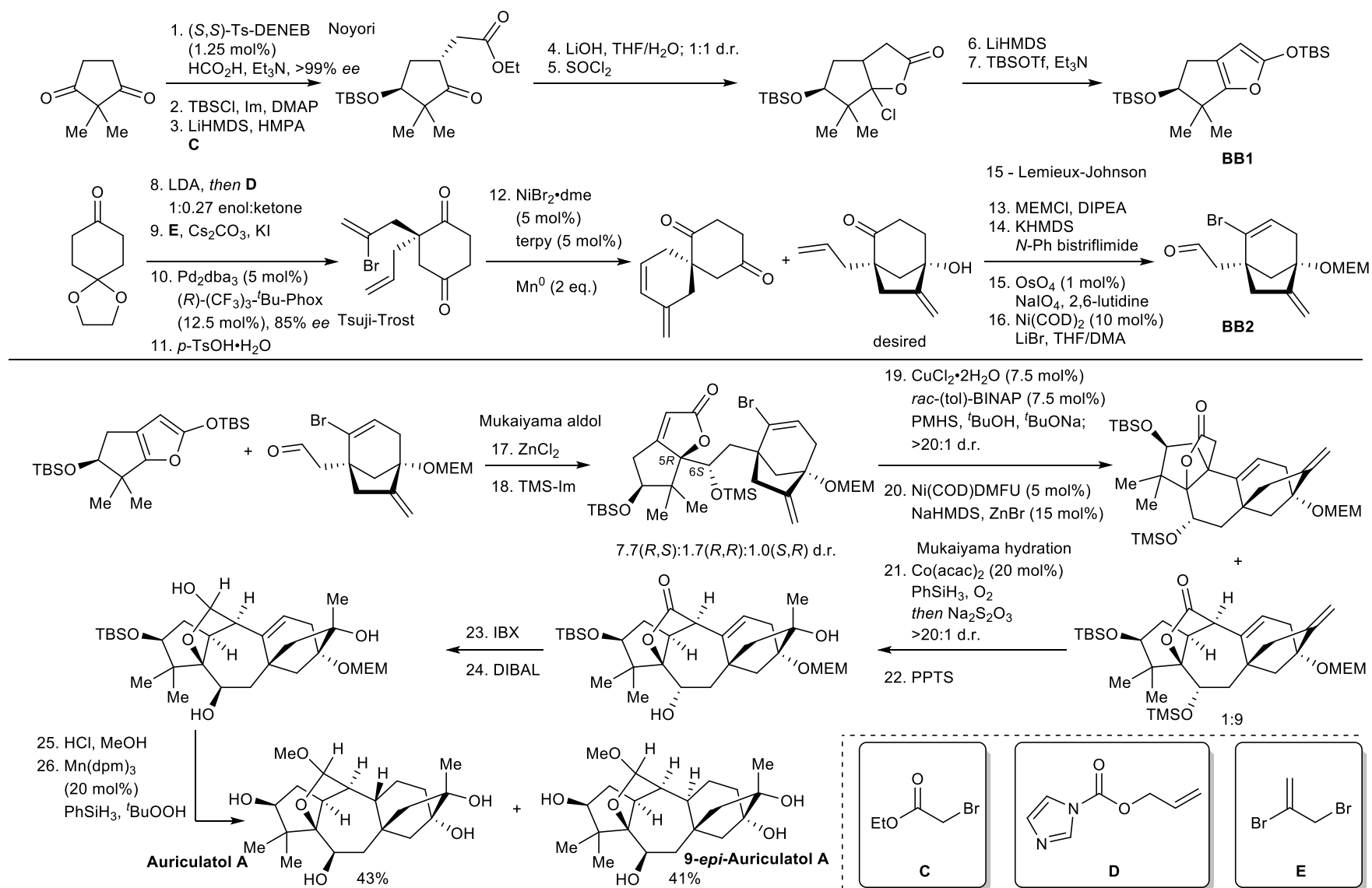
J. K. Thompson, K. C. Youngblood, Y. H. S. Teh, C. M. Farley, Z. Zhang, S. C. Virgil and S. E. Reisman, *J. Am. Chem. Soc.*, **2025**, DOI:10.1021/jacs.5c17269.



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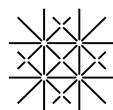
Sparr Group Seminar
12.11.2025
Anton Budeev

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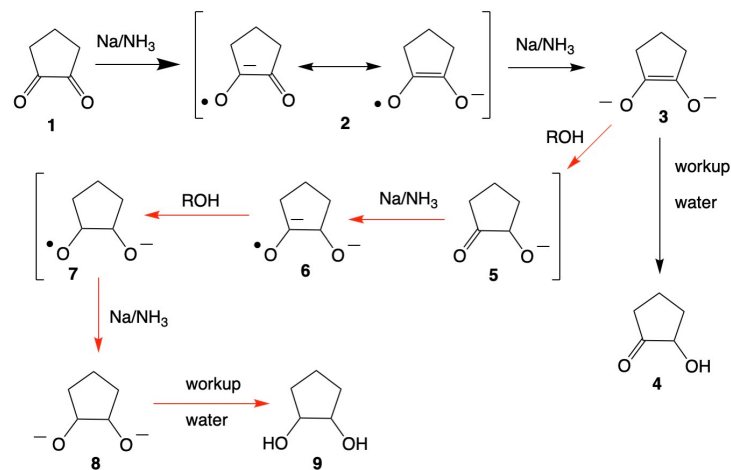
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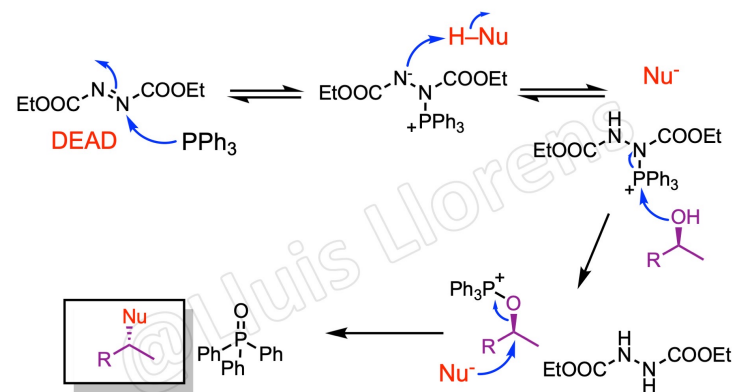
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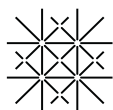
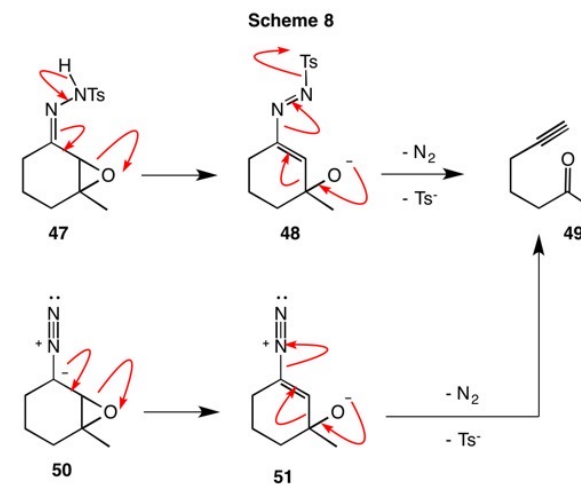
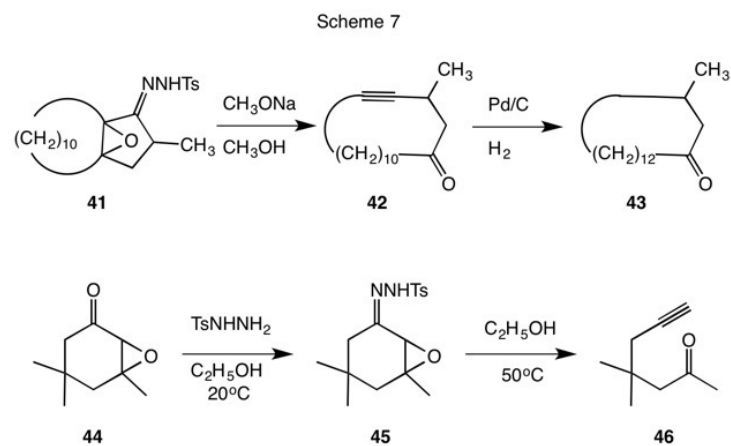
Birch reduction of ketones:



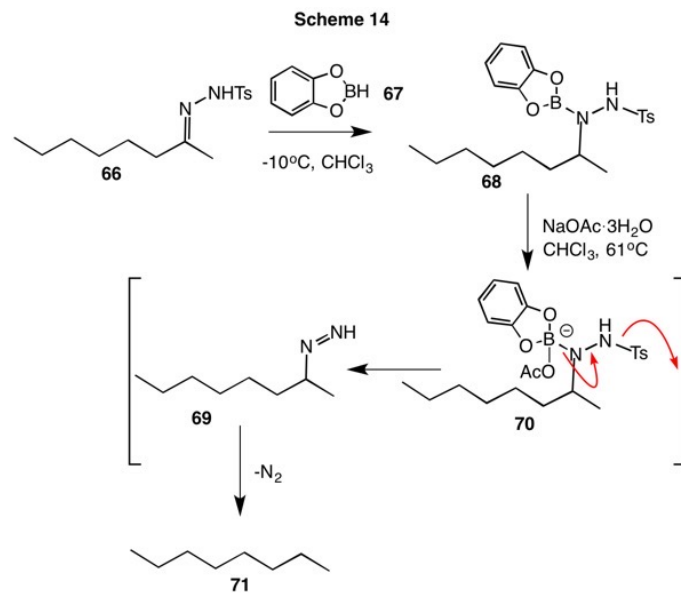
Mitsunobu reaction:



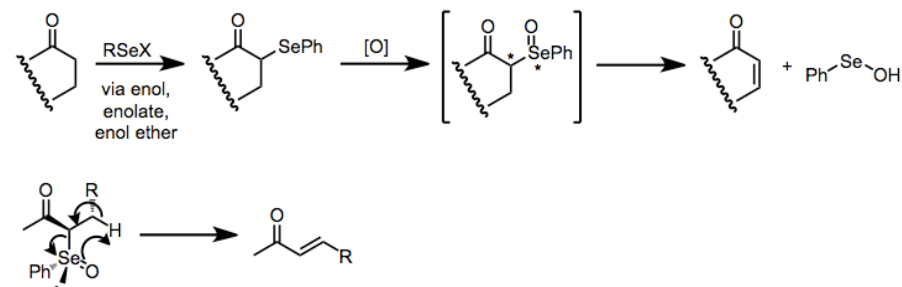
Eschenmoser-Tanabe reaction:



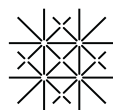
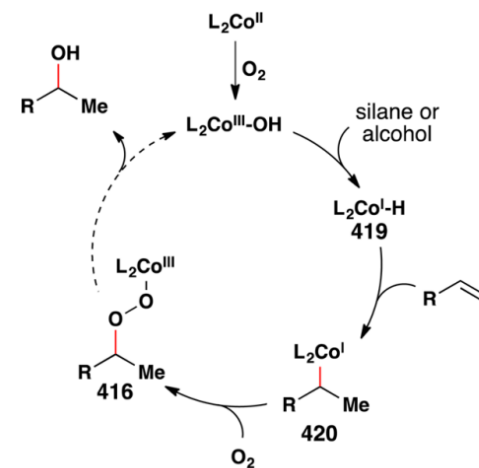
Wolff-Kischner reaction (Kabalka modification):



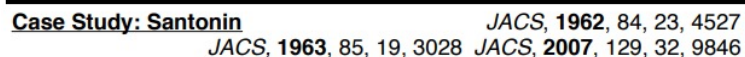
Selenoxide elimination:



Mukaiyama hydration:



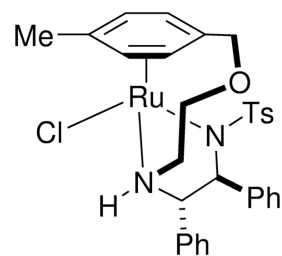
Type A Rearrangement: Dienones and Aliphatic Enones



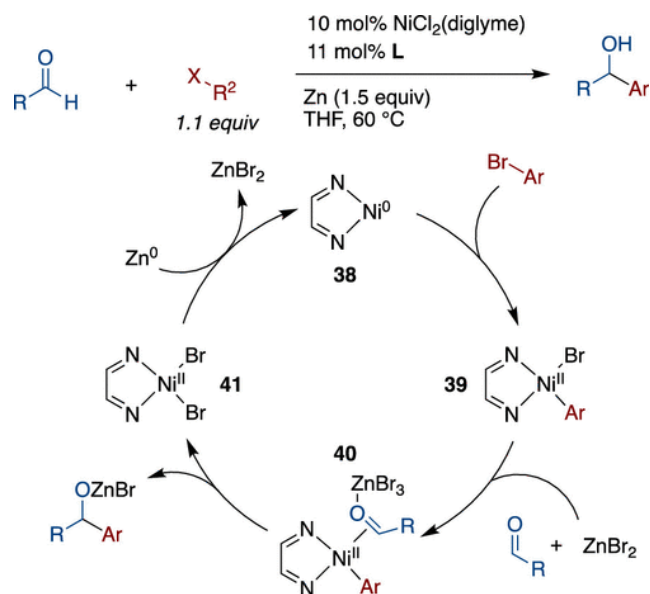
The diagram illustrates a catalytic cycle for the asymmetric epoxidation of allylic alcohols. The cycle involves the following steps:

- Reaction of (VI) with allylic alcohol:** A chiral sulfonamide (VI) reacts with an allylic alcohol (R-CH=CH-CH₂-OR') to form an epoxide intermediate (VII) and a sulfonamide (VIII).
- Regeneration of (VI):** The sulfonamide (VIII) is converted back to the chiral sulfonamide (VI) by reaction with a reagent (Me-N-morpholine), completing the cycle.

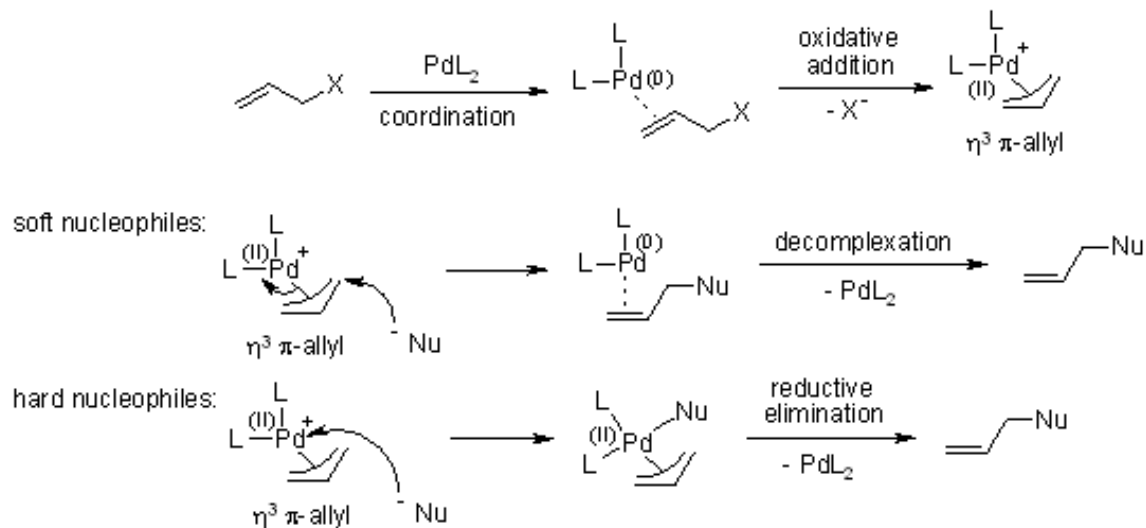
(*S,S*)-Ts-DENEB:



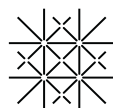
Auriculatol A Step 12:



Tsuji-Trost reaction:



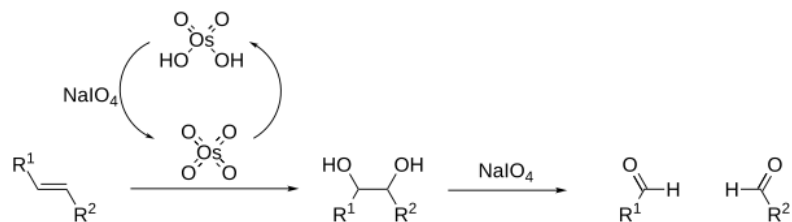
K. J. Garcia, M. M. Gilbert and D. J. Weix, *J. Am. Chem. Soc.*, 2019, **141**, 1823–1827.



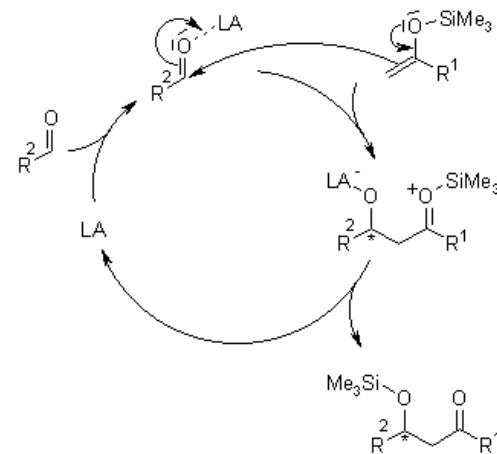
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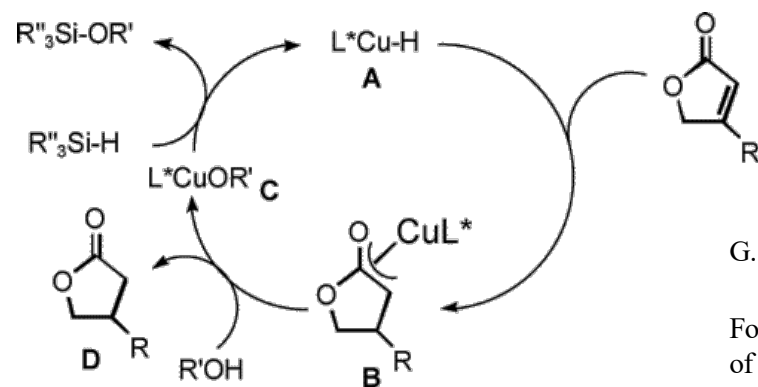
Lemieux-Johnson:



Mukaiyama aldol reaction:



Auriculatol A Step 19:



G. Hughes, M. Kimura and S. L. Buchwald, *J. Am. Chem. Soc.*, 2003, **125**, 11253–11258.

For radical hydrofunctionalizations (Mukaiyama hydration, hydrogenation in step 26 of Auriculatol A synthesis) see:

W. M. Crossley, C. Obradors, R. M. Martinez and R. A. Shenvi, *Chem. Rev.*, 2016, **116**, 8912–9000

