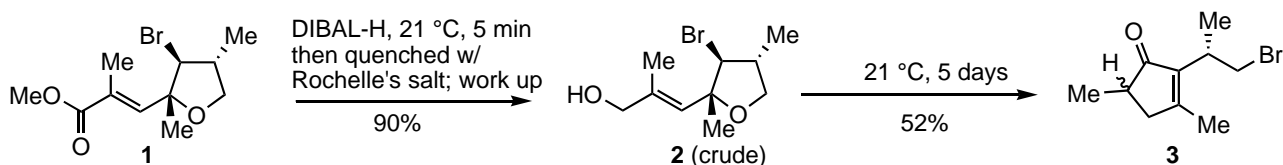


$^1\text{H-NMR}$ (300 MHz, CDCl_3)

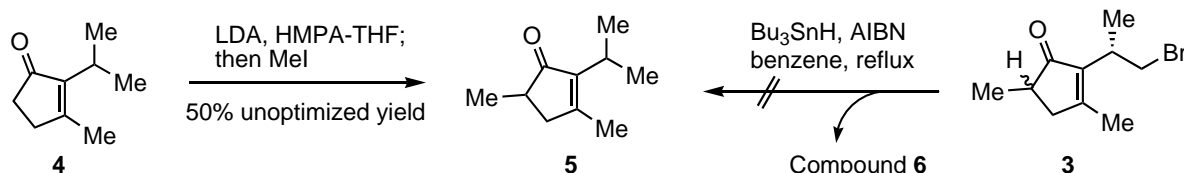
7.29 - 7.14 (m, 9H), 6.48 (d, 1H, $J = 11.1$ Hz), 6.01 (d, 1H, $J = 11.1$ Hz), 5.10 and 5.37 (AB system, 2H, $J = 15.5$ Hz), 3.09 (s, 3H), 1.64 (s, 3H)

Collet, S.; Guingant, A. *et al. Tetrahedron* **2007**, 63, 11250

One day, a graduate student in the M. E. Jung's Lab @ UCLA synthesized allyl alcohol **2** by DIBAL-H reduction of **1**. The spectroscopic data for **2** were identical to those they reported earlier. However, when compound **2** was allowed to stand without solvent at 21 °C for 5 days, it completely rearranged to a new compound **3**, which could be isolated in a highly pure state in 52% yield. *Propose a mechanism for the rearrangement.* They assumed that there must have been traces of either Al (III) salts or acid present in the sample of **2** resulting from the DIBAL-H reduction.



To prove the structure of **3**, the graduate student decided to prepare an authentic sample of a simple derivative. Since compound **4** was known in the literature, he decided to prepare its methylated derivative **5** and compare it to the product of simple debromination of **3**. Methylation of **4** proved to be successful to give the 5-methyl enone **5**; However, when the bromide **3** was treated with AIBN and Bu_3SnH in refluxing benzene, he isolated a compound **6** that was clearly different from the expected product **3**. *Propose a structure of the compound **6** and the mechanism for its formation.*



$^1\text{H-NMR}$ data for **6**: δ 2.73 (dd, 1H, $J = 18.1, 6.7$ Hz), 2.35 (m, 1H), 2.14 (t, 2H, $J = 7.5$ Hz), 2.08 (dd, 1H, $J = 18.1, 2.2$ Hz), 2.03 (s, 3H), 1.40 (tq, 2H, $J = 7.5, 7.4$ Hz), 1.15 (d, 3H, $J = 7.5$ Hz), 0.87 (t, 3H, $J = 7.4$ Hz).

$^{13}\text{C-NMR}$ data for **6**: δ 212.3, 168.5, 139.4, 40.9, 39.7, 25.2, 21.8, 17.3, 16.9, 14.2.

M. E. Jung and D. Yoo, *JOC*, **2007**, ASAP