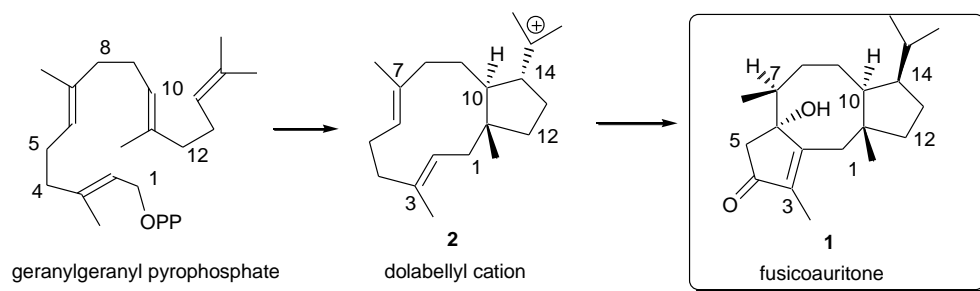
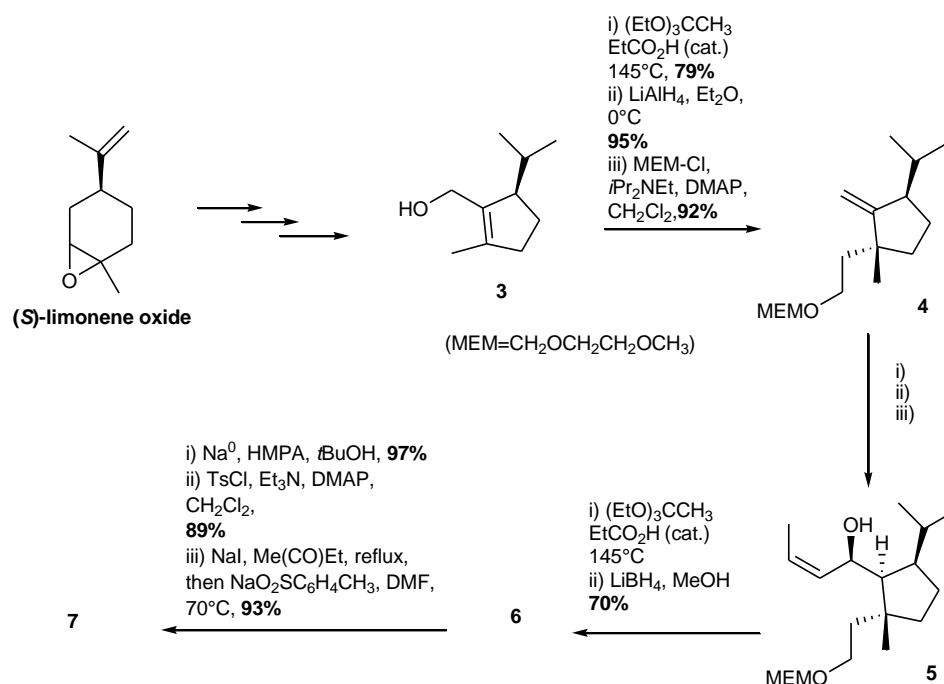


Total synthesis of (+)-Fusicoauritone 1

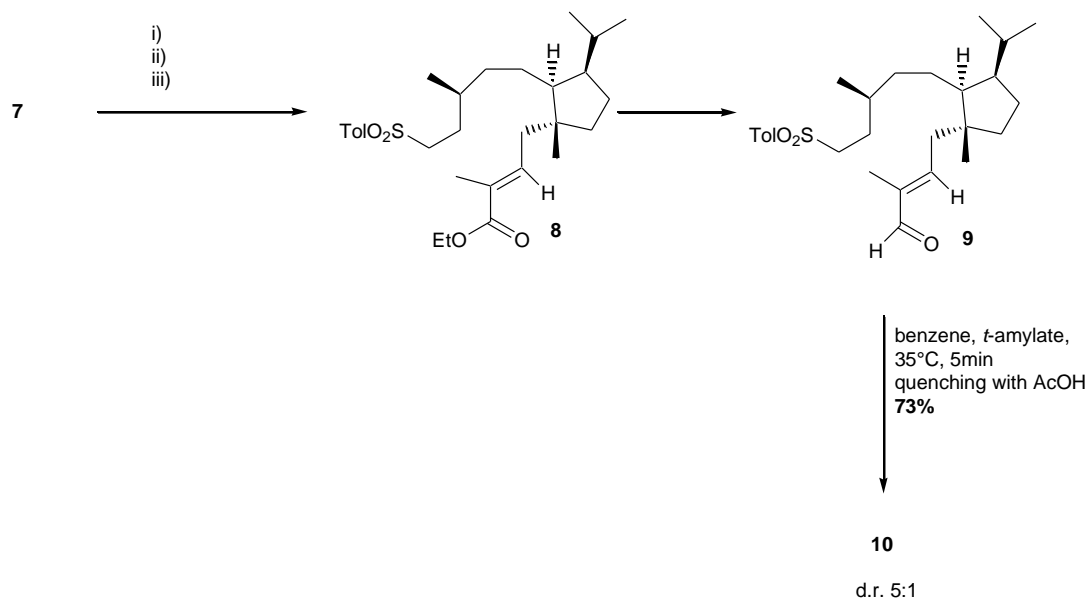
Fusicoauritone 1 is part of the diterpenoid family Fusococcanes. Fusococcanes exhibit significant phytohormonal activities associated with the activation of plasma membrane H^+ -ATPase. The putative biogenesis of this tricyclic framework is described by a π -cation cyclisation to form an eleven-membered ring, and further transannular events from a [9.3.0]cyclotetradecane precursor lead to fusococcanes. The initial carbocyclisation of geranylgeranyl monophosphate yields the dolabellanes, a widely distributed class of marine natural products by means of hydration or elimination from cation 2 (scheme 1).



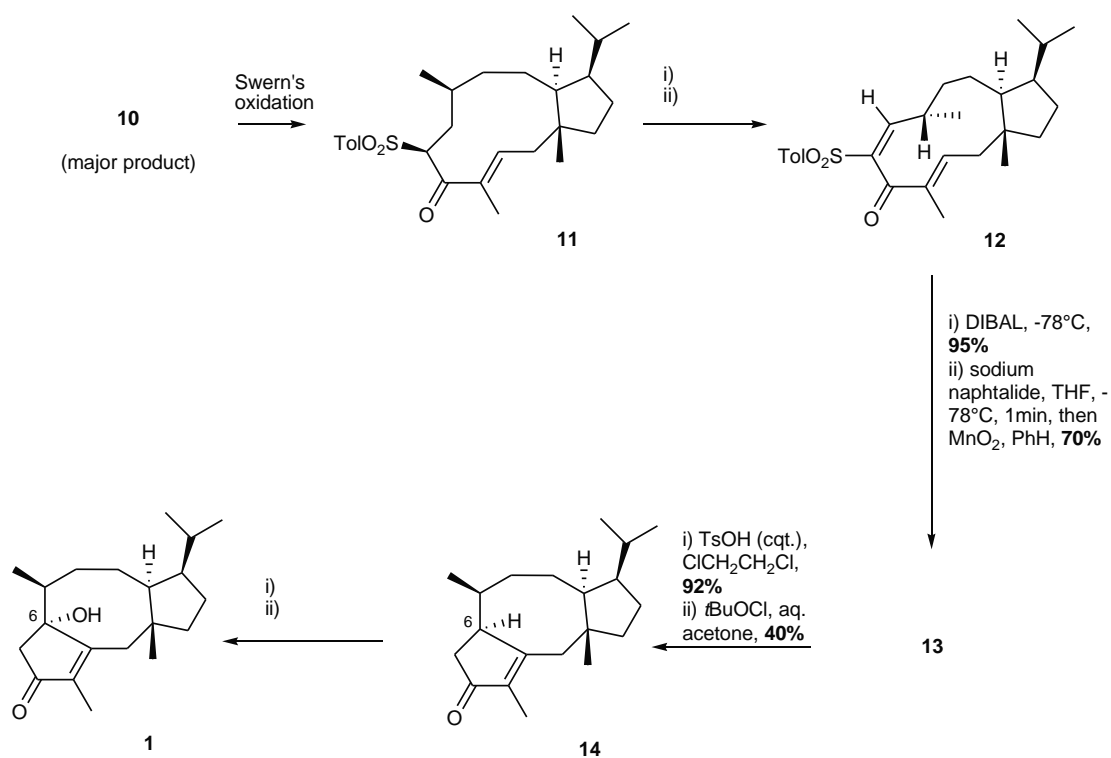
Scheme 1 : biosynthesis of fusicoauritone.



1. Propose a synthesis of 3 (starting from (S)-limonene oxide).
2. Explain formation of 4.
3. Gave reagent for the transformation 4 to 5.
4. Gave the structure of 6 & 7.



5. Gave reagents for transformation **7** to **8** and **8** to **9**.
6. Gave structure of **10** and explain its formation.



7. Gave reagents for formation of **12**.
8. Gave structure of **13**.
9. Explain transformation **13** to **14**, give name of that reaction.
10. Give reagent for transformation **14** to **1**.