

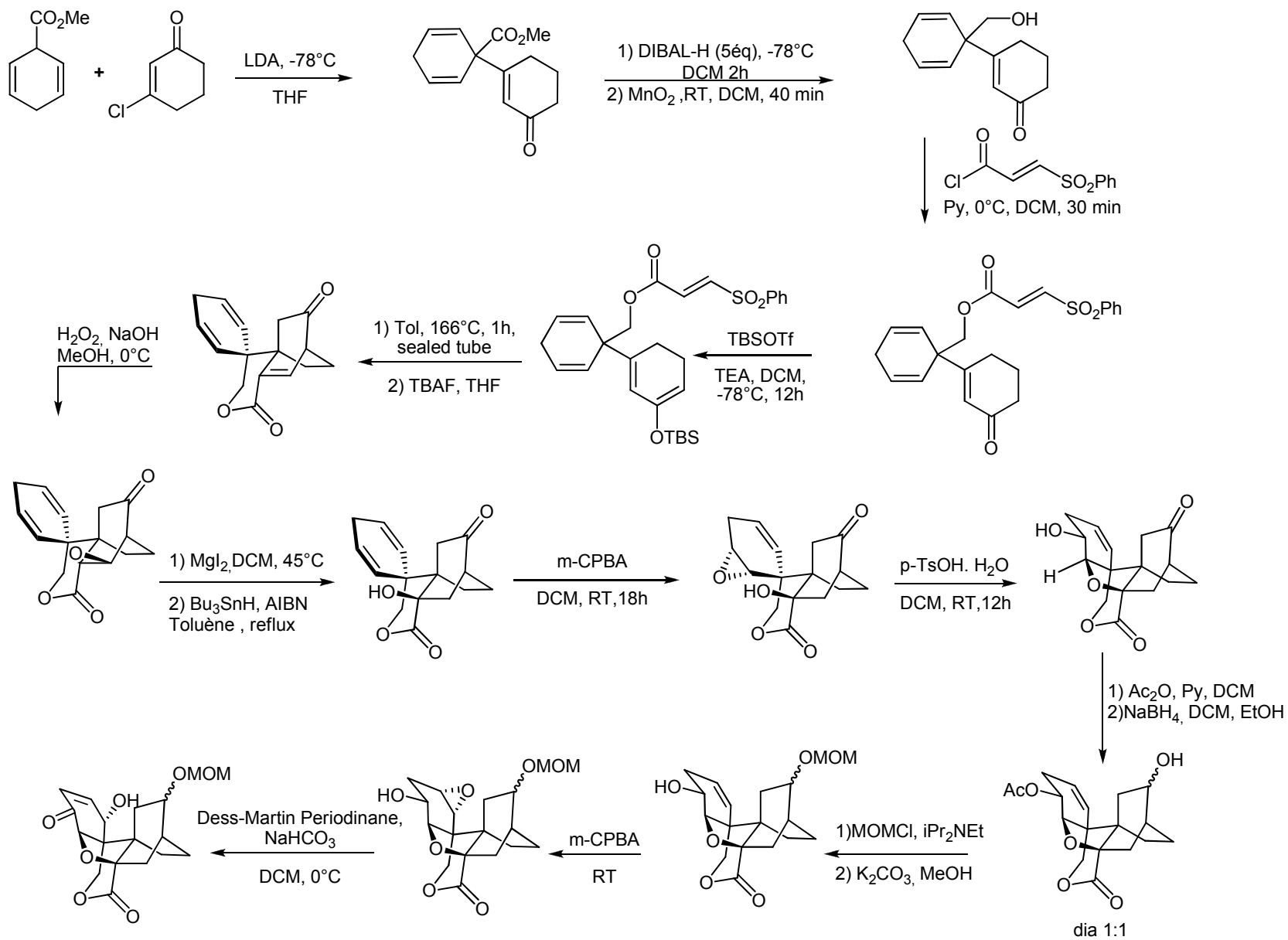
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D3-2.

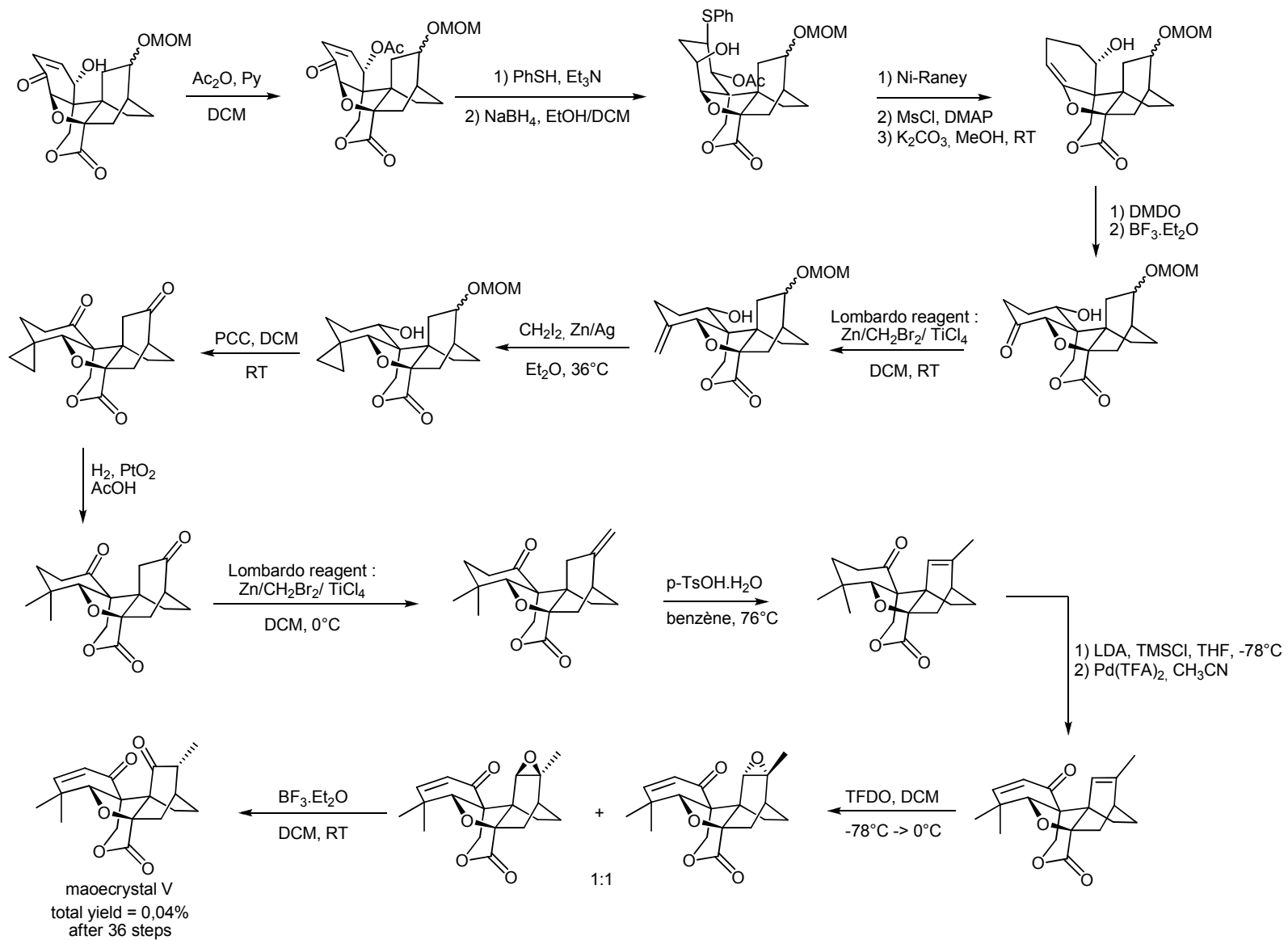
Total Synthesis of (±)-Maoecrystal V.

Maoecrystal V was first isolated in 1994 from *Isodon eriocalyx* Hara, which is distributed in Yunnan province. The source of vegetation from which maoecrystal V was obtained had been used in herbal medicine for some time.

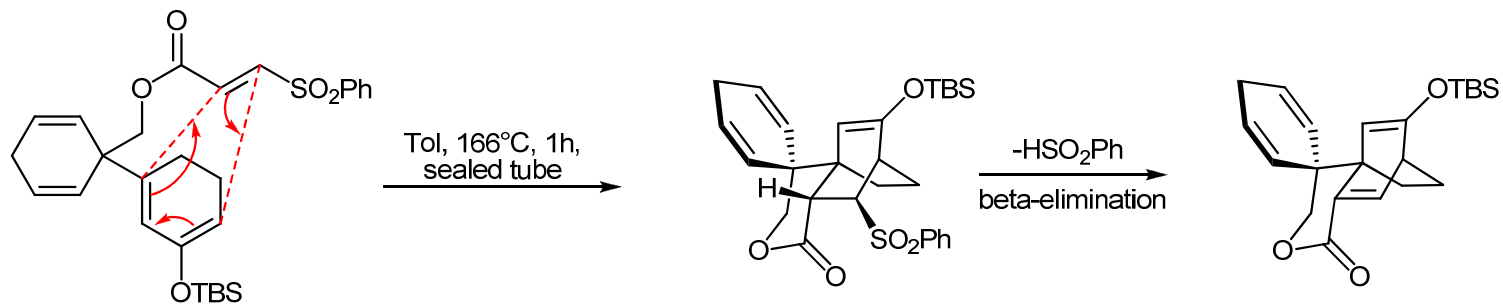
Moreover, maoecrystal V was evaluated for cytotoxicity against a variety of human tumor cell lines, and it was found to be selectively active, for instance, against the He La cell line, with an impressive IC₅₀ value of approximately 20 ng/mL.

- 1) Find structures from A to S. DMDO means dimethyldioxirane and TFDO means methyl(trifluoromethyl)dioxirane. Lombardo reagent is like Tebbe reagent.
- 2) What is the name of the reaction 5?
- 3) Explain the mechanism to obtain E.





2) The reaction 5 is a Diels-Alder reaction:



3) The mechanism to obtain E is:

