TOWARDS THE TOTAL SYNTHESIS OF ELISABETHIN A

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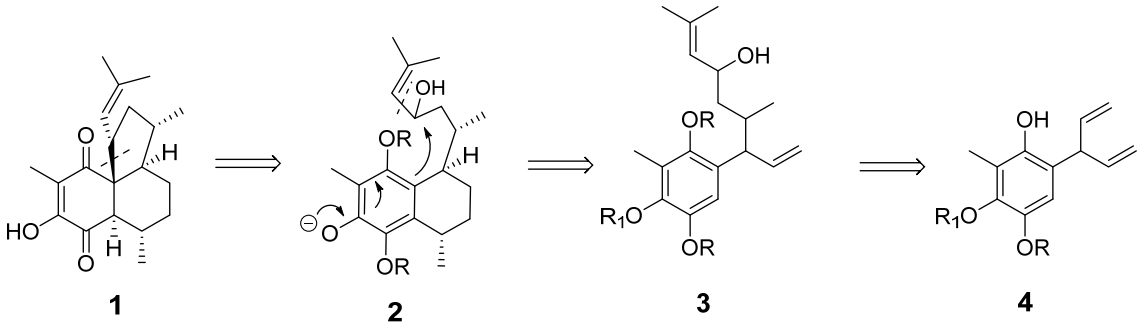
Elisabethin A (1) is a marine diterpenoid isolated in 1998 by Rodriguez et al. from a Caribbean sea whip. The structure elucidation unfolded a tricyclic *cis trans* fused 5,6,6 ring system containing six contiguous stereo centers and a fully substituted enedione functionalty. Due to the small amounts from isolation the relative configuration could be ascertained but not the absolute. For the same reason, extensive biological testing of this promising structure was not feasible, making a total synthesis inevitable. [1]

Since the discovery of this new elisabethane skeleton, only two groups approached a total synthesis, both relying on Diels Alder reactions as key step unfortunately without success. [2,3]

Challenged by this situation, we decided to develop an alternative approach based on the proposed biosynthesis from serrulatane precursor 2.

Therefore we aimed to assemble one ring after the other and each stereocenter consecutively. This course of action should guarantee a highly enantio- and diastereoselective synthesis to proof /disprove the suggested absolute configuration. It should also allow synthesising enough material for extensive biological testing.

The retro synthetic analysis commenced with the disassembly of the five membered ring of 1. Further simplification gives rise to structure 2 which in turn could be derived from aromatic compound 3. Advanced intermediate 4 represents a suitable precursor which can be produced easily on multigram scale.



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[1] Rodríguez, A. D.; González, Eduvigis. *J. Am. Chem. Soc.* **1998**, *63* (20), 7083.

[2] Heckrodt, T. J.; Mulzer, J. *J. Am. Chem. Soc.* **2003**, *125* (16), 4680–4681.

[3] Waizumi, N.; Stankovic, A. R.; Rawal, V. H. *J. Am. Chem. Soc.* **2003**, *125* (43), 13022–13023.