STUDIES TOWARDS THE TOTAL SYNTHESIS OF DYSIHERBOL A

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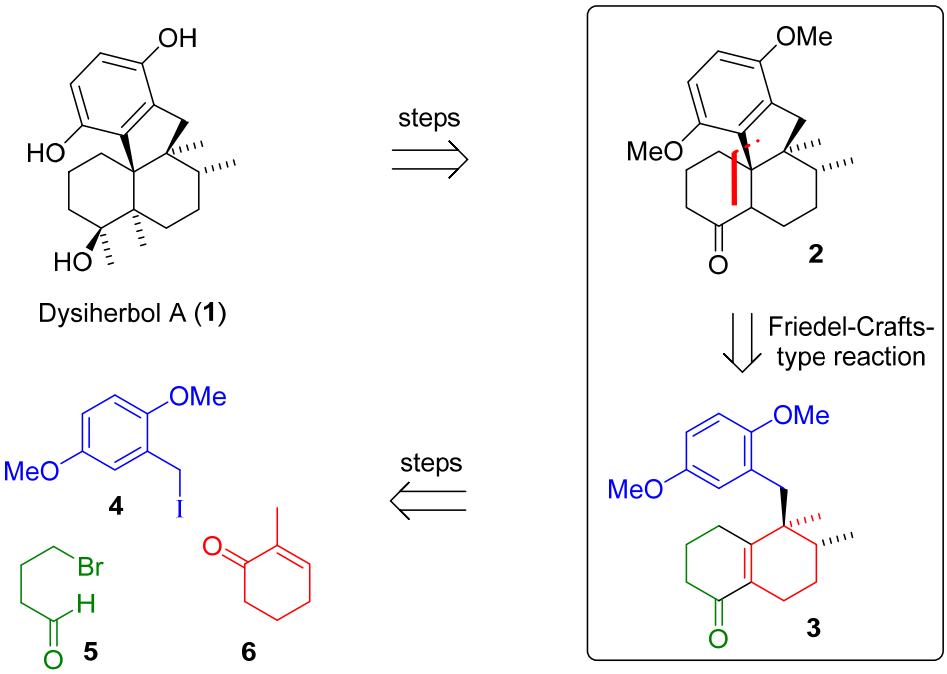
Dysiherbol A (**1**), a representative of the hydroquinone-sesquiterpenes, was recently isolated from a marine sponge. The natural product features a novel tetracyclic carbon skeleton and three adjacent quaternary carbon centers. Interestingly, Dysiherbol A shows submicromolar inhibitory activities towards the cancer cell line NCI-H929 and the protein complex NF-κB, regulating inflammatory, immunological and carcinogenic processes. Because of the potent bioactivity and intriguing structure, Dysiherbol A is both an attractive and challenging target compound for total synthesis.[1]

In this work, the carbon skeleton of Dysiherbol A (**1**) is constructed through an intramolecular Friedel-Crafts-type reaction, using enone **3** as a precursor to afford intermediate **2**. The synthesis of enone **3** is accomplished from the building blocks **4**-**6**, exploiting an enantioselective one-pot 1,4-addition / α-alkylation as a key step.[2]



[1] W.-H. Jiao, G.-H. Shi, T.-T. Xu, G.-D. Chen, B.-B. Gu, Z. Wang, S. Peng, S.-P. Wang, J. Li, B.-N. Han, W. Zhang, H.-W. Lin, J. Nat. Prod. **2016**, 79, 406–411.

[2] D. T. Ngoc, M. Albicker, L. Schneider, N. Cramer, Org. Biomol. Chem. **2010**, 8, 1781–1784.