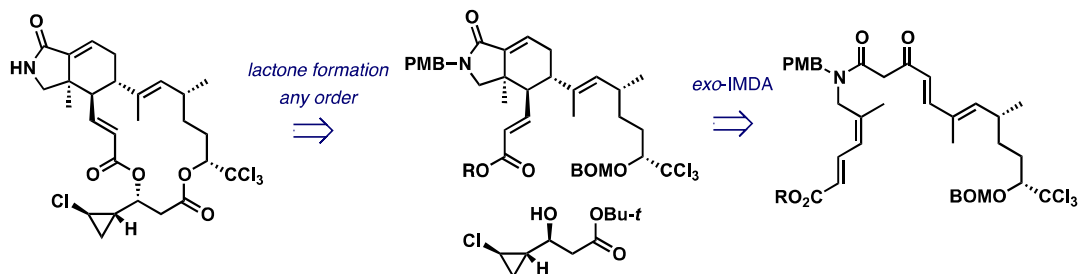


Total Synthesis and Structural Revision of Muironolide A.

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Muironolide A is a fascinating tetrachlorinated marine polyketide isolated from the sponge of *Phorbis* sp. Only 90 μ g had been isolated, and the structure was established by nanoscale NMR techniques. Herein we report the total synthesis of the substance with the assigned structure of muironolide A, propose a revised structure based on NMR data, and complete the enantioselective total synthesis of muironolide A.