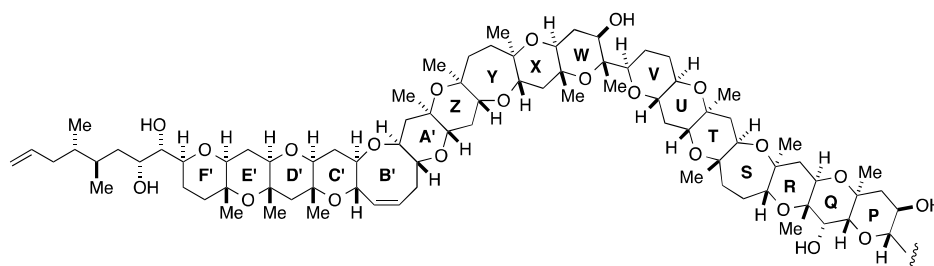


Convergent synthesis of the *ent*-ZA'B'C'D' ring system of maitotoxin

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Maitotoxin (MTX) was first found from the surgeonfish *Ctenochaetus striatus* in 1976, and later isolated from cultured cells of the dinoflagellate *Gambierdiscus toxicus*. MTX is the most toxic and largest natural product (MW 3422) known to date, except for biopolymers. It is implicated in ciguatera food poisoning and is involved in Ca^{2+} -dependent mechanisms over a wide range of cell types. The full structure and partial relative configuration of MTX were reported by Yasumoto et al., and then the relative configuration of the remaining parts and the absolute configuration were determined independently by the Tachibana and Kishi groups. The unusual molecular structure of MTX contains 32 fused ether rings, 28 hydroxyl groups, 21 methyl groups, 2 sulfate esters, and 98 chiral centers (Figure 1). The skeletal novelty, complexity, and biological activity of MTX have attracted the attention of synthetic organic chemists, and the syntheses of several fragments of MTX have been reported by the Nicolaou, Oishi, and our groups. We report the synthesis of *ent*-ZA'B'C'D'-ring system based on convergent synthesis using Suzuki-Miyaura cross coupling of alkylborane with (*Z*)-vinyl iodide.



Lipophilic part of maitotoxin (1)