

STRUCTURES OF MAITOTOXIN AND CIGUATOXIN CONGENERS ISOLATED FROM CULTURED *GAMBIERDISCUS TOXICUS*. *Memoirs of the Queensland Museum* 34(3): 600. 1994:— Maitotoxin (MTX) was isolated from cultured cells of *Gambierdiscus toxicus* from the Gambier Islands (GII1 strain). To determine the structure, the toxin was cleaved into 3 fragments (A, B, C) by sodium periodate oxidation, followed by sodium borohydride reduction. Structures of fragments A and B were determined by 2D NMR experiments. The structure of fragment B, the largest fragment of 2306 Dalton, was negative FAB MS/MS experiments. Comparison of the spectra between the fragments and intact MTX allowed us to assemble the whole structure of MTX. MTX has molecular weight 3422 (nominal, as disodium salt) and is constructed from 142 carbon chain, comprising 32 ether rings, 21 methyls, one exomethylene, 28 hydroxyl groups, and two sulfate esters.

Two ciguatoxin (CTX) congeners, CTX3C and CTX4A, and a new polyether toxin named gambierol were isolated from the culture of *G. toxicus* from Rangiroa Atoll (GRI1 strain). CTX4A is 52-epiCTX4B and CTX3C is 1,2,3,4-nor-E-homo-CTX4B. The ladder-shaped polyether skeleton of gambierol differs from the other two. Production of CTX4A and CTX3C, by cultured *G. toxicus* unambiguously confirmed the generic origin of ciguatera toxins.

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Yasumoto, Takeshi et al. 1994. "Structures of maitotoxin and ciguatoxin congeners isolated from cultured *Gambierdiscus toxicus*." *Memoirs of the Queensland Museum* 34, 600–600.

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