

ABOUT GONYAUTOXINS-I, -II, -III, AND -IV

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Summary: The identity of recently reported neurotoxins from Gonyaulax excavata and Bay of Fundy scallops with previously described gonyautoxins is suggested.

Recently Wichmann, et al., have reported in this journal (1) the isolation of 11 α - and 11 β -hydroxyneosaxitoxin sulfate from the toxic Bay of Fundy scallop, Placopecten magellanicus and the dinoflagellate, Gonyaulax excavata (Synonym = G. tamarensis var. excavata). We believe that these compounds are identical with gonyautoxin-I and gonyautoxin-IV first isolated from the toxic clam, Mya arenaria (2) and later from a number of sources including the above two particular organisms by us and other workers. Thus, the toxins have been reported in such organisms as G. tamarensis (3), the Bay of Fundy scallops (4), the Japanese mussel, Mytilus sp. and clam, Tapes japonica (5), the European (6) and Alaskan (7) mussels, different strains of Japanese Gonyaulax sp. (5,8,9,10), Japanese scallops (11,12), and Cape Cod Gonyaulax spp. (13). We also proposed the same structures on the basis of the high resolution nmr spectra and other evidence (14,15,16).

Similarly we believe that 11 α - and 11 β - hydroxysaxitoxin 11-O-sulfate reported by Boyer, et al. (17) are respectively identical with gonyautoxin-II and gonyautoxin-III which were also first isolated from Mya arenaria (2,18) and incorrectly reported as free 11 α - and 11 β -hydroxysaxitoxin (19). Both compounds were found along with gonyautoxin-I and -IV in all the aforementioned organisms (loc. cit.).

An initiative is being taken to confirm the identity by direct comparison of the specimen and nmr spectra.

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