

S34-1 Study on the structures and biosynthetic pathway of indole alkaloids, notoamides

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We isolated new alkaloids, notoamides, from a marine-derived *Aspergillus* sp., which was isolated from the common mussel, *Mytilus edulis galloprovincialis*. Among them, notoamide B (**1**) and stephacidin A (**2**) contain a bicyclo[2.2.2]diazaoctane ring. They are proposed to be constructed from notoamide E (**3**) by the intra-molecular Diels-Alder (IMDA) reaction between the double bond in the isoprenyl substituent and the diene moiety in the azadiene ring derived from the diketopiperazine ring. However, the feeding experiment of ¹³C-labeled **3** did not afford **1** and **2**. Further, Williams and Gloer *et al.* reported the isolation of antipodes of **1** and **2** from the terrestrial *Aspergillus versicolor*. Both enantiomers of **1** and **2** were shown to be optically pure. With regard to the generation of Both enantiomers of **1** and **2**, the IMDA reaction would occur in a face-selective manner in both *Aspergillus* sp. In addition, an enantiomeric pair of versicolamide B (**4**) was also isolated from both *Aspergills*. The biosynthetic pathway of notoamide congeners is an interesting subject of current investigation.

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