



Marine bioactive natural products from coral-derived fungi collected from the South China Sea

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Abstract:

Symbiotic microorganisms in corals have proven to be a rich source of structurally novel and biologically active secondary metabolites that have become interesting and significant resources for drug discovery. In recent years, during our ongoing study on bioactive natural products from the South China Sea, diverse bioactive secondary metabolites with variety structures have been isolated from coral-derived fungi, such as alkaloids, macrolides, anthraquinones, and peptides. For instance, a pair of new enantiomeric alkaloid dimers, (+)- and (–)-pestaloxazine A, with unprecedented symmetric spiro-[oxazinane-piperazinedione] skeleton, consisting of 22 carbons and 12 heteroatoms, were isolated from a *Pestalotiopsis* sp. fungus derived from the soft coral *Sarcophyton* sp.. A series of prenylated indole alkaloids were isolated from *Aspergillus* sp. fungus derived from the gorgonian coral *Dichotella gemmacea*. Quinazoline alkaloids with heptacyclic skeleton formed via a bridging hemiaminal linkage was isolated from *Scopulariopsis* sp. fungus derived from gorgonian *Carijoa* sp. Prenylated dihydroquinolone derivatives were obtained from the fungus *Aspergillus* sp. cultured from gorgonian *Muricella abnormalis*. And a series of 14-membered resorcylic acid lactones (RALs) belonging to a family of benzannulated macrolides were obtained from a gorgonian-derived fungal strain *Cochliobolus*

lunatus. The compounds exhibited diverse promising bioactivities, including antifouling activity against barnacle *B. amphitrite*, antibacterial activity towards pathogenic bacteria, cytotoxicity against human tumour cell lines, and antiviral activity against human respiratory syncytial virus (RSV) and enterovirus 71 (EV71). It could be concluded that the bioactive secondary metabolites produced by coral-derived symbiotic microorganisms should be a rich source for discovery of marine lead compounds.

Biography:

Chang-Yun Wang received his PHD. degree in marine drugs from Ocean University of China, Qingdao in 1999. From 2000 to 2002, he moved to University of Duesseldorf, Germany, and joined the research group of Prof. Dr. Peter Proksch as a DAAD fellow. Since 1995, he is a professor of marine pharmaceutical chemistry at Ocean University of China. He is a member of the Commission of Marine Drugs Special Committee, Pharmaceutical Association of China. He has published more than 100 papers in reputed journals and has been serving as an editorial board member of *repute*