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Novel secondary metabolites from marine-derived and endolichenic fungi

Microorganisms produced secondary metabolites, not essential for growth, but serve diverse survival functions in nature. Microbial secondary metabolites have diverse chemical structures and are useful for lead compounds in drug discovery such as penicillin G, erythromycin, streptomycin, doxorubicin, rapamycin, and lovastatin. Recently, the discovery of secondary metabolites from marine microorganisms have been increased and they have diverse chemical structures and bioactivities. So, the research of secondary metabolites from marine microorganism are important medically, economically, and industrially. Also, endolichenic fungi living in the thalli of lichens are analogous to the plant endophytes inhabiting the intercellular spaces of the hosts. To date, only a limited number of secondary metabolites have been reported from them. They have become a new avenue for evaluation of bioactive secondary metabolite chemistry in natural products research.

In these papers introducing this time, we will explain the structure determination and biological activities of novel compounds isolated from the marine-derived fungi *Penicillium* sp. and *Stachybotrys* sp., and the endolichenic fungus *Phoma* sp..

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