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Bioactive secondary metabolites produced by fungi

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A variety of bioactive secondary metabolites have been reported from plant-associated microorganisms. Halophytes, plants that can only grow in hypersaline area, were reported to host beneficial microorganisms such as plant growth-promoting endophytes. The microorganisms have been reported to show notable mutualistic symbiosis with halophytes to help them survive in high saline condition. Finding out bioactive secondary metabolites as well as elucidation of relationship(s) between microbes and the host halophyte has been paid attention, because of their functional diversity. Novel microbes often have associated with novel natural products. In an effort to investigate natural compounds with interesting structures from fungi, we selected plants from a distinct environmental setting which could be a promising source. Several fungi were isolated from halophyte or medicinal plants. Some strains of the fungi were cultivated on a large scale and extracted with ethyl acetate, which were subjected to a series of chromatographic methods, leading to the isolation of tens of compounds. The isolated compounds were identified by analysis of spectroscopic methods such as 1D-, 2D-NMR, and MS. Details of isolation, structure determination, and biological activities will be discussed.