

4. Characterization and Structure-Elucidation of Antifungal Metabolites from the Microbial Culture Broth, *Kitasatospora cheerisanensis*. Surk-Sik Moon. Dept. of Chemistry Kongju National University, Kongju 314-701, Korea

Microbial culture has provided a variety of useful agrochemical agents such as kasugamycin, blasticidin, and validamycin in part due to their ready biodegradability compared to synthetic agents. It is quite necessary to complete the discovery of new agrochemicals from microbial origin that microbiologists, chemists, and related experts should cooperate in the field of new organism isolation, new or novel screening systems development, rapid isolation and structure-elucidation of active metabolites.

Microbiological experts are now reporting many antagonistic organisms to plant pathogens and preliminary reports without chemical information of active ingredients. However, chemical structures of active metabolites are a key to procure exclusive patent rights (uses and materials) of the compounds or microbes themselves as well as to inform on chemical modifications. For instance, recent developments of fenpiclonil from pyrrolnitrin and azoxystrobin from strobilurins provide good examples that cooperations with related experts are prerequisite for success.

In view of agrochemical development from microbial broth, it is presented how to characterize and elucidate active principles from the broth in this report. Antifungal metabolites from the culture broth of new microorganism *Kitasatospora cheerisanensis* were isolated by solvent extraction, silica gel, LH-20, C-18 chromatography. Final purification by a reversed phase silica gel HPLC provided five isolates which turned out to be a class of macrolide bafilomycins. The chemical structures were elucidated by spectroscopic data such as IR, UV, NMR, MS. 2D NMR spectra were intensively analyzed to characterize the detailed structures and HR FABMS used to deduce their molecular formulas and weights. The isolates showed the following formula and weight: YM210, (C₃₅H₅₆O₈, 604.82), YM310 (C₃₅H₅₈O₉, 622.84), YM410 (C₃₉H₆₁N₁₁O₁₁, 719.91), YM550 (C₄₄H₆₅N₁₃O₁₃, 815.99), YM1214 (C₃₉H₆₀O₁₂, 720.89). The literature survey showed they were a bafilomycin-type. To the best of our knowledge, the isolate YM410 has not been reported yet.