B311 Impact of Acidification on the Metabolic Diversity of Microbial Communities in Aquatic Microcosm

Young-Beom Ahn*, Hong-Bum Cho[1], and Yong-Keel Choi
Department of Biology, Hanyang University, Research Center for Molecular Microbiology, Seoul National University, Department of Biological Engineering, Seokyeong University[1]

To determine the effects of acidification on the metabolic diversity of heterotrophic bacterial community in an artificial pH-gradient microcosm, the author analyzed the BIOLOG color responses by principal component analysis. Numbers of total bacteria in aquatic microcosm were not affected by acidification and that the population of heterotrophic bacteria and activity of extracellular enzyme decreased as pH became lower. The average well color development followed a sigmoid curve with incubation time and increased as pH became higher. Color development value in a plate was obtained at 50 hour as an optimum incubation time. The color production in the BIOLOG community-level assay was caused by cell density at the above pH 5, but the below pH 4 caused by cell activity. Principal-component analysis of color responses revealed distinctive patterns among the pH-gradient microcosm samples. As pH increased from 3 to 7, the proportion rate of first principal component increased from 47.7% to 75.9%, while second principal component decreased from 16.5% to 30.5%.

B312 Optimal Conditions for the Isolation of Rare Actinomycetes

Youn Kyung Oh*, Young Sook Kim, and Chi Nam Seong
Department of Biology, Sunchon National University

Optimal conditions for the isolation of rare actinomycetes were evaluated. Four different pretreatment methods used are as follows; i) dry heat for 24 hours at 30℃, ii) dry heat for 1 hour at 100℃, iii) wet heat for 15 minutes at 70℃, and iv) 1.5% phenol treatment before wet heat for 30 minutes at 30℃. The method iii) was the most efficient pretreatment for the recovery of rare actinomycetes except *Nocardia*. Four different isolation media such as Bennet's agar(BA), Humic acid-Vitamin agar(HVA), Starch Casein agar(SCA) and Hair Hydrolysate-Vitamin agar(HHVA) were compared with each other. The largest number of rare actinomycetes were recovered using HVA. Optimal conditions for the isolation of *Nocardia* was obtained when the air dried soil and the Diagnostic Sensitivity Test(DST) agar were used as a source and medium, respectively.