

## **Exploiting of uncultured microorganisms for drug discovery**

LEE Jae-Chan, KWON Ju-Lee, IM Jee-Min, PARK Dong-Jin and KIM Chang-Jin\*

*Korea Research Institute of Bioscience and Biotechnology (KRIBB), Taejeon, 305-600  
Korea.*

Recent progress in molecular microbial ecology has revealed that traditional culturing methods fail to represent the scope of microbial diversity in nature, since only a small proportion of viable microorganisms in a sample are recovered by culturing techniques. The number of microorganisms typically cultured from soil represents 1% or fewer of the total microbial community. DNA-DNA reassociation measurements and other culture-independent methods reveal that the total genetic diversity in a soil sample of 100g is likely over 5,000 species. The challenge inherent in exploiting the uncultured microorganisms in soil for drug discovery is gaining access to their metabolites without relying on traditional culturing methods. It was proposed that these metabolites be accessed by a direct cloning of metagenome from soil microorganisms. A number of reports indicate that this approach is technically feasible and can reveal novel biology and chemistry, including novel antibiotics. On this time, I am going to discuss about new resources of uncultured microorganisms for the discovery of new antibiotics, and hope another renaissance of novel drugs next penicillin be opened.