

A312 Identification of Alkalophilic Fungus RYM-202 Using Morphological Characteristics and Sequencing of the Internal Transcribed Spacer and 18S rDNA

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An alkalophilic fungus RYM-202 that was isolated from soil appeared activities of CMCase and xylanase on agar plate of modified Czapek medium containing CMC and xylan as a carbon source, respectively. For the identification of this strain, we observed first morphological characteristics. After cultivation for 10 days, this fungus showed well differentiated and erect, verticillately branched conidiophores, bearing whorls of slender flask shaped divergent phialides. Conidia were ellipsoidal to short cylindrical, hyaline, mainly one-celled, and borne in slimy heads. For sequencing, two universal primers, NS1 and ITS4, were used to amplify region containing 18S rDNA and internal transcribed spacer (ITS) of test strain. Almost complete sequences of 18S rDNA (1,700bp) and ITS (600bp) were determined to elucidate the phylogenetic position of strain RYM-202. The sequences of 18S rDNA and ITS revealed high degree of homology with *Verticillium dahliae* by BLAST search. On the basis of morphological and molecular analyses, RYM-202 was identified as *Verticillium* sp. The phylogenetic analysis of 18S rDNA and ITS sequences showed the current taxonomic grouping and evolutionary relationships of the RYM-202.

A313 DNA-DNA hybridization에 의한 *Bacillus*속 균의 동정

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수계환경 등에 축적된 유기태 인의 분해에 작용하는 phytase를 분비하는 미생물을 토양으로부터 탐색 분리하였다. 분리된 미생물 중 분해능이 뛰어난 A11 strain을 동정하였다. A11 균주는 Gram 양성 포자를 형성하는 전형적인 *Bacillus*속 균이었으며, 수종의 표준균주 및 분리균주를 대상으로 생리 생화학적 특성, 화학분류학적 특성, 16S rDNA의 partial sequencing, DNA G+C content 조사 및 DNA-DNA hybridization을 행하였다. 생리적 특성 및 균체 지방산 조성의 특성으로는 탄소수 15개의 anteiso form을 주로 가지는 Kaneda의 group B에 해당하였으나, 배양 특성 및 생화학적 특성은 Kaneda의 group A인 *B. subtilis* group에 해당하였다. 정확한 분류군을 확인하고자 16S rDNA의 partial sequencing을 수행하여 *B. subtilis* group임을 확인하였다. 최종적인 동정은 *B. subtilis* group의 표준균주 및 분리균주의 DNA G+C content 조사 및 DNA-DNA hybridization을 수행함으로써 DNA G+C content 46.3%의 *B. amyloliquefaciens*로 동정되었다. DNA-DNA hybridization은 Kaneda의 group A에 속하는 *B. subtilis*와 *B. amyloliquefaciens*를 서로 다른 cluster로 뚜렷이 구분함으로써 동정을 완료하였다.