**O-06. Molecular Cloning and Characterization of Protein Kinase C Gene in the Rice Blast Fungus.** Chang Hyun Khang and Yong-Hwan Lee. Department of Agricultural Biology and RCNBMA, Seoul National University, Suwon, Korea 441-744.

*Magnaporthe grisea*, the causal agent of the rice blast, differentiates a specialized infection structure, an appressorium that is crucial for host plant penetration. It was elucidated that the level of $Ca^{2+}$ concentration in the cells is important for appressorium formation. Furthermore, diacylglycerol, a known activator of protein kinase C (PKC), induces appressorium formation on a noninductive surface. These evidences demonstrate that $Ca^{2+}$ and diacylglycerol related signaling systems are involved in appressorium formation of *M. grisea*. PKC is also transmitters and amplifiers in signal transduction. PKC-like genes were characterized not only from higher eukaryotes but also from simple eukaryotes including some filamentous fungi. PKC gene of *M. grisea* is cloned using a PCR-based strategy. PCR primers designed after conserved regioins in the same gene from other organisms. The 400-bp PCR product was used to identify genomic clones in Bacterial artificial chromosome (BAC) library. Southern blot hybridization analysis indicated that PKC gene is present as a single copy in the genome of *M. grisea*. PKC gene is composed with 3891 bp, and deduced amino acid sequence showed a high degree of similarity with PKCs of other fungi. Further characterization and functional analysis of PKC gene in *M. grisea* are in progress.

**O-07. Isolation, Antifungal Activity, and Structure Elucidation of a Glutarimide Antibiotic, Streptimidone, Produced by *Micromonospora coerulea*.** Beom Seok Kim[1], Byung Kook Hwang[1] and Surk Sik Moon[2]. [1]Department of Agricultural Biology, Korea University, Seoul, Korea 136-701. [2]Department of Chemistry, Kongju National University, Kongju, Korea 314-701.

The antibiotic Am58A that showed strong antifungal activity against some plant pathogenic fungi was purified from the culture broth and mycelial mats of *Micromonospora coerulea* strain Am58 using various chromatographic procedures. The molecular formula of the antibiotic Am58A was deduced to be $C_{16}H_{23}NO_4$ (M+H, m/z 294.1707) by high resolution FAB mass spectroscopy. Analyses of 1H NMR, 13C NMR, and 2D NMR spectral data revealed that the antibiotic Ao58A is a glutarimide antibiotic streptimidone, 4-(2-hydroxy-5,7-dimethyl- 4-oxo-6,8- nonadienyl)-2,6-piperidinedione. The antibiotic Am58A was very effective in inhibiting growth of *Phytophthora capsici*, *Didymella bryoniae*, *Magnaporthe grisea* and *Botrytis cinerea* in a range of $3 \sim 10\,\mu g\ mL^{-1}$ of MICs. *In vivo* evaluation of the antibiotic Am58A under the greenhouse condition showed strong control efficacies against the development of *P. capsici*, *B. cinerea* and *M. grisea* on pepper, cucumber and rice plants, respectively. The antibiotic Am58A was equally as effective as metalaxyl, vinclozolin and tricyclazole in the control of these plant diseases. However, it did not show any phytotoxicity on the plants even when treated with $500\,\mu g\ mL^{-1}$.