E220 Antifungal Activity of Chitinase by Environmental Stress from Maize Seed

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Plant exhibits an altered pattern of protein synthesis in response to pathogenic invation and abiotic stress. One of these pathogenesis-related proteins has been identified as chitinase, which is capable of hydrolysis fungal cell wall of inhibiting growth. This observation has led to the suggestion that the role of chitinase is to protect plants against fungal invation *in vivo*. We induced chitinase from *Zea mays L.* Golden cross Bantam T-51 under various condition and the chitinase was purified chitin-affinity chromatography and CM-cellulose chromatography. The optimal pH of purified chitinase under osmotic stress was 5.0±0.05 and that was highly activated at 10mM Zn^{2+} ion. The inhibition rate was 86% at *Phytophthora capsici*. The induced chitinase by fungal elicitor has optimal pH of 6.0±0.2 and activation of high value at *Fusarium oxysporium* elicitor included 12% polysaccride. The inhibition rate was 67.3% at *Trichocherum viridet*. The activity of expressive chitinase by abiotic stress was highly activated at salinity concentration of 50mM. The inhibition rate was 72% at *Fusarium oxysporium*.

E221 Comparison of Physiological Changes on the salt stress among Cultivars of Rice Plant

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Physiological changes on the salt stress among cultivars of rice plant (Annapurna, Dongjin-byeo and Soan-byeo) were investigated.
Chlorophyll fluorescence changes under salt stress showed a decrease of Fv/Fm in all cultivars. All cultivars were recovered almost the original value of Fv/Fm after 48 hrs recovery. O_2 evolving activity of the three cultivars decreased after salt stress for 3 days. The extent of decline of chlorophyll fluorescence(Fv/Fm) and O_2 evolution were the greatest in Annapurna and the results of Dongjin-byeo was similar to those of Soan-byeo. NADP reduction of PS I and whole chain electron transport by chloroplast isolated from salt -stressed cultivars were decreased. Proline and glycinebetaine were generally thought to have an important role in plant salt tolerance, Annapurna accumulated more proline and glycinebetaine than Dongjin-byeo and Soan-byeo under salt stress. The results showed that Annapurna, Indica type was more sensitive to deterioration of photosynthetic function in response to salt stress than Dongjin-byeo and Sona-byeo, Japonica type.