E215 Carbohydrate metabolism in the senescing leaves of *Zea mays*

Dong Hee Lee, Ji Young Chang* and Young Sang Kim
Dept. of Biology, Pusan National University, Pusan, 609-735, Korea

To investigate the changes of carbohydrate metabolism in the senescing leaves of *Zea mays* we measured the changes in the contents of protein, sucrose, glucose, fructose and starch as well as in the activities of a-amylase, sucrose synthase, and three kinds of invertase isozymes during dark-induced senescence of maize leaves. In the senescing leaves, the contents of reducing sugars and protein were temporarily increased at 4 day and rapidly decreased thereafter, whereas sucrose contents were gradually decreased until 4 d of senescing leaves and significantly decreased thereafter. The activities of intracelluar invertases such as soluble acid and alkaline invertase were gradually enhanced until 4 d of leaf senescence and gradually declined thereafter, whereas the activity of extracellular invertase was not significantly changed during leaf senescence. The pattern of sucrose synthase activity was similar to that of intracellular invertase activity. On the other hand, the change of starch contents was similar to that of sucrose content during dark-induced senescence. We suggest, therefore, that the temporary accumulation of reducing sugar at the middle stage of leaf senescence may be due to the activation of both intracellular invertase and sucrose synthase, and the deactivation of enzymes related to carbohydrate metabolism may result in the decreases of carbohydrate such as reducing sugar, sucrose and starch at the late stage of leaf senescence.

E216 Molecular Characterization of Pneumococcal Surface Protein A(PspA) of *Streptococcus pneumoniae* Isolated from Korea

Kyung Suk Chung[1,] · Kwang Jun Lee · Young Ran Ju, · Song Mee Bae · Young Hee Kim · Young Hee Lee · Ki Sang Kim · Chong Sam Lee[1]*
Dept. of Biology, College of Natural Sciences, Sungshin Women's Univ.[1]
Laboratory of Molecular Bacteriology, National Institute of Health

Streptococcus pneumoniae is the most frequent causative agent of bacterial pneumoniae, otitis media, meningitis. Several pneumococcal proteins, including PsaA(pneumococcal surface adhesin A), pneumolysin, neuraminidase, and autolysin, have been shown to elicit protection against penumococcal infection in mice. It is hoped that one or more of these proteins can be used in future vaccines to broaden the protection afforded by the necessarily limited number of polysaccharide-protein conjugates. To know the molecular characterization of invasive *S. pneumoniae* PspA, we selected the strains of different capsular serotype among the clinical isolates. We have examined the RFLP pattern of *pspA* DNA fragments amplified using LSM2 and LSM111 primers derived from the *pspA* sequence of *S. pneumoniae* RX1. Examination of DNA sequences within *pspA* revealed that the occurrence of recognition sites for *HincII* endonuclease is distinct among the strains of different capsular serotype.