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

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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 pneumococcal 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.

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Effects of wastewater on biosynthesis of phospholipid and
fatty acids composition of *Chlorella ellipsoidea*

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The growth, biosynthesis of phospholipid and their fatty acid composition of *Chlorella ellipsoidea* during the culture in wastewater polluted the heavy metals were analyzed to compare with the control. The quantity of heavy metals in cells significantly increased according to the duration of culture, whereas it was decreased to a minimum 25.4% in a wastewater. Compared to the control, growth, contents of total lipid, fatty acid methyl esters in cells cultured in wastewater were decreased predominantly and also phospholipid synthesis was inhibited in wastewater to compare with the control. The composition of fatty acids in phosphatidylcholine(PC) and phosphatidylethanolamine(PE) were utilized together both in the control and in the wastewater the saturated fatty acid(behenic acid,38.32%) and unsaturated fatty acid(palmitoleic acid,16.27%) to midphase of the culture. Otherwise, at the latephase of culture PE was saturated fatty acid(behenic acid, palmitic acid,63.82%) to formation the phospholipid, and PC was utilized the saturated fatty acid(behenic acid,40.02%) and the unsaturated fatty acid(palmitoleic acid,15.77%).