

P110

## **Studies on the ATP-dependent protease, Lon of *Pseudomonas syringae* pv. *tabaci***

Hyun Ju Yang, Ji Young Cha, So Young Park,  
Jun Seung Lee and Hyung Suk Baik

Division of Biology Sciences, Pusan National University, 609-735, Busan, Korea

*Pseudomonas syringae* is a plant pathogen whose pathogenicity and host specificity are thought to be determined by effectors injected into plant cells by type III secretion system (TTSS). *P. syringae* pv. *tabaci* causes wildfire on tobacco and elicits hypersensitive response (HR) in nonhost plants.

Lon protease functions as a negative regulator of TTSS by degrading HrpR, activator of *hrp* regulon in *Pseudomonas syringae*. Lon-associated regulation of the TTSS also involves proteolysis of effectors prior to secretion. Thus Lon protease is thought to play a significant role in regulation of *P. syringae* pathogenesis.

In this study we confirmed that like other *P. syringae* strains, TTSS of *P. syringae* pv. *tabaci* also is expressed in *hrp*-inducing medium similar to plant tissue environment by transformation of *hrpA* promoter transcriptional fusion.

We amplified *lon* gene of *P. syringae* pv. *tabaci* by PCR using designed primer and identified it by sequencing. The sequence of the *lon* gene has 90~93% homology with other *P. syringae*. We cloned and constructed *lon* mutant using homologous recombination. In addition, we overexpressed the *lon* gene in *E. coli* and identified Lon by SDS-PAGE.