

CURRICULUM VITAE
IL-PYUNG AHN, Ph. D.

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National Institute of Agricultural Biotechnology
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EDUCATION

- 1994.3–1999.8. Ph.D. in Plant Pathology
Seoul National University, Korea
- 1991.3-1994.2 M.S. in Plant Pathology
Seoul National University, Korea
- 1987.3-1991.2 B. S. in Agricultural Biology
Seoul National University, Korea

PROFESSIONAL EXPERIENCE

- 2002.7- Present Research Investigator, Rural Development Administration (RDA)
National Institute of Agricultural Biotechnology
- Signaling pathways for unraveling action mechanisms of vitamin B1 in inducing disease resistance.
 - Transcriptome analysis of thiamine induced Arabidopsis genes by SSH and subsequent macroarray, and microarray of Affymatrix whole genome oligo-chip.
 - Production of transgenic lines (over expression and RNAi)
 - Comparative analyses of plant defense responses against biotrophic and necrotrophic pathogens. Molecular, cell biological, and genetic tools and resources were used. Established Arabidopsis work platform at NIAB.
 - Rice with *Magnaporthe grisea* vs. *Cochliobolus miyabeanus*
 - Arabidopsis thaliana with *Pseudomonas syringae* pv. *tomato*, *P. syringae* pv. *maculicola*, and *Pectobacterium carotovorum*
 - Arabidopsis with fungal pathogens such as *Botrytis cinerea* and *Alternaria brassicicola*
 - Dissection of infection process of rice brown leaf spot pathogen, *Cochliobolus miyabeanus*
 - Generated and examined *CHOLINE KINASE 1 (OsCK1)*-overexpressing

transgenic rice for their resistance to biotic/abiotic stresses in collaboration with Dr. Jung-Sook Lee and Dr. Seok-Chul Seo at NIAB. Searching for genes interacting with *OsCKI* by yeast two hybrid.

2001.3- 2002.6 Post-doctoral research associate, RDA
National Institute of Agricultural Science and Technology (Dr. Choonghoe Kim)
• Characterization of defense mechanisms induced by plant growth promoting rhizobacteria *Bacillus* sp. EXTN-1.

1999.9- 2001.2 Post-doctoral research associate, Seoul National University
Center for Agricultural Biomaterials (Dr. Yong-Hwan Lee)
• Studied novel function of vitamin B1 as a plant defense activator.
• Uncovered signaling pathways, especially calcium-dependent signaling, involved in pre-infection development of *Colletotrichum* species pathogenic on red pepper.

1996.3- 2001.2 Ph. D. student, Seoul National University
Department of Agricultural Biology (Dr. Yong-Hwan Lee)
• Dissertation: “Characterization of virulence-associated double-stranded RNA from *Nectria radicumicola*”

1991.3- 1994.2 Master student, Seoul National University
Department of Agricultural Biology (Dr. Hoo-Sup Chung)
• Thesis: “Vegetative compatibility grouping of *Fusarium oxysporum* from cucurbits”
• Vegetative compatibility grouping of *Colletotrichum* species

2007.3-Present Lecturer, Konkuk University
Department of Molecular Biotechnology, “Molecular Biology”

PUBLICATIONS

- Ahn, I.P.** *, Kim, S., and Lee, Y.H. 2007. Substances from class Actinomycetes perturb pepper anthracnose through inhibition of appressorium formation by *Colletotrichum gloeosporioides*. Plant Pathology J. (accepted) (corresponding author).
- Ahn, I.P.** * 2007. Glufosinate ammonium-induced pathogen inhibition and defense responses culminate in disease protection in *bar*-transgenic rice. Plant Physiol. (accepted) (corresponding author).
- Ahn, I.P.** * 2007. Disturbance of Ca²⁺/calmodulin-dependent signaling pathway is responsible for the resistance of Arabidopsis *dnd1* against *Pectobacterium carotovorum* infection. Mol. Plant Pathol. (accepted) (corresponding author).
- Ahn, I.P.** *, Kim, S., Lee, Y.H., and Suh, S.C. 2007. Vitamin B₁-induced priming is dependent on hydrogen peroxide and the *NPR1* gene in Arabidopsis. Plant Physiol. 143:838-848. (corresponding author)

- Ahn, I.P.***, Lee, S.W., and Suh, S.C. 2007. Rhizobacteria-induced priming in *Arabidopsis* is dependent on ethylene, jasmonic acid and *NPR1*. *Mol. Plant-Microbe Interact.* 20:759-768. (corresponding author)
- Ahn, I.P.***, and Suh, S.C. 2007. Calcium restores prepenetration morphogenesis abolished by methylglyoxal-bis-guanyl hydrazone in *Cochliobolus miyabeanus* infecting rice. *Phytopathology* 97:331-337. (corresponding author)
- Ahn, I.P.***, and Suh, S.C. 2007. Calcium/calmodulin-dependent signaling for prepenetration development in *Cochliobolus miyabeanus* infecting rice. *J.Gen. Plant Pathol.* 73:113-120. (corresponding author)
- Kim, S., **Ahn, I.P.**, Rho, H.S., and Lee, Y.H.* 2005. An *in planta* expressed hydrophobin gene, *MHP1*, from *Magnaporthe grisea* is required for fungal development and plant colonization. *Mol. Microbiol.* 57:1224-1237.
- Ahn, I. P.**, Kim, S., Kang, S., Suh, S. C., and Lee, Y.H.* 2005. Defense mechanism of rice against *Cochliobolous miyabeanus* is distinct from that against *Magnaporthe grisea*. *Phytopathology* 95:1248-1255.
- Ahn, I.P.**, Kim, S., and Lee, Y.H.* 2005. Vitamin B1 functions as a plant activator in disease resistance. *Plant Physiol.* 138:1505-1515.
- Lee, Y.M., Wee, H.S., **Ahn, I.P.**, Lee, Y.H., and An, C.S.* 2005. Molecular characterization of cDNA for cystein-rich antifungal protein from *Capsicum annuum*. *J. Plant Biol.* 47:375-382.
- Park, C.H., Kim, S., Park, J.Y., **Ahn, I.P.**, Jwa, N.S., Im, K.H., and Lee, Y.H.* 2004. Molecular characterization of a pathogenesis-related protein 8 gene encoding a class III chitinase in rice. *Mol. Cells* 17:144-150.
- Uhm, K.H., **Ahn, I.P.**, Kim, S., and Lee, Y.H.* 2003. Calcium/calmodulin-dependent signaling for prepenetration development in *Colletotrichum gloeosporioides*. *Phytopathology* 93:82-87.
- Ahn, I.P.**, Kim, S., Choi, W.B., and Lee, Y.H.* 2003. Calcium restores prepenetration morphogenesis abolished by polyamines in *Colletotrichum gloeosporioides* infecting red pepper. *FEMS Microbiol. Lett.* 227:237-241.
- Ahn, I.P.**, Uhm, K.H., Kim, S., and Lee, Y.H.* 2003. Signaling pathways involved in preinfection development of *Colletotrichum gloeosporioides*, *C. coccodes*, and *C. dematium* pathogenic on red pepper. *Physiol. Mol. Plant Pathol.* 63:281-289.
- Ahn, I.P.**, Kim, S., Im, K.H., and Lee, Y.H.* 2003. Vegetative compatibility grouping and pathogenicity of *Colletotrichum gloeosporioides* isolates from different host plants. *Plant Pathol. J.* 19:269-273.
- Ahn, I.P.**, Park, K., and Kim, C.H. 2002. Rhizobacteria-induced resistance perturbs viral disease progress and triggers defense-related gene expression. *Mol. Cells.* 13:302-308.
- Kim, S., **Ahn, I.P.**, Park, C.H., Park, S.Y., Jwa, N.S., and Lee, Y.H.* 2001. Molecular characterization of the cDNA encoding an acidic isoform of PR-1 protein in rice. *Mol. Cells* 11:115-121.
- Ahn, I.P.**, and Lee, Y.H.* 2001. A viral double-stranded RNA up regulates the fungal virulence of *Nectria radicumicola*. *Mol. Plant-Microbe Interact.* 14:496-507.
- Kim, S., **Ahn, I.P.**, and Lee, Y.H. 2001.* Analysis of genes expressed during *Magnaporthe grisea/Oryza sativa* interactions. *Mol. Plant-Microbe Interact.* 14:1340-1346.
- Jwa, N.S., Park, S.G., Park, C.H., Kim, S.O., **Ahn, I.P.**, Park, S.Y., Yoon, C.H., and Lee,

- Y.H.* 2000. Cloning and expression of a rice cDNA encoding a *Lls1* homologue of maize. *Plant Pathol. J.* 16:151-155.
- Ahn, I.P.**, and Lee, Y.H.* 2000. Vegetative compatibility groups and pathogenicity variation among isolates of *Fusarium oxysporum* f.sp. *melonis*. *Plant Pathol. J.* 16:227-230.
- Ahn, I.P.**, Chung, H.S., and Lee, Y.H.* 1998. Vegetative compatibility groups and pathogenicity among isolates of *Fusarium oxysporum* f. sp. *cucumerinum*. *Plant Dis.* 82:244-246.

MANUSCRIPTS IN PREPARATION

- Ahn, I.P.*** 2007. Inhibition of cell death is responsible for altered bacterial soft rot development in the detached leaves of Arabidopsis. *Plant Physiol.*
- Ahn, I.P. ***, and Lee, S.W. 2007. Systemic resistance by rhizobacteria protects tomato plants from biotrophic and necrotrophic pathogen infections through multiple defense mechanisms. *Plant Molecular Biology* (Submitted).
- Ahn, I.P. *** 2007. Characterization of compatible and incompatible interactions between *Brassica rapa* subsp. *pekinensis* and *Alternaria brassicicola*. *Eukaryotic Cell* (Submitted).

PROFESSIONAL ACTIVITIES

Korean Society of Plant Pathology	
Member	1991.3 - Present
Korean Society of Mycology	
Member	1994.3 – Present
Korean Society for Molecular and Cellular Biology	
Member	2003.1 - Present
International Society of Molecular Plant-Microbe Interactions	
Member	2007.2 – Present

MEETINGS AND SEMINARS

Invited

2001. 4. Annual Meeting of Korean Society of Mycology (University of Seoul, Korea)
“Fungal pathogenicity is conferred by the viral infection”
- 2001.8. Gyeongsang National University (Jinju, Korea)
“A viral infection regulates fungal virulence”
- 2001.10. Annual Meeting of Korean Society of Plant Pathology (Kyongju, Korea)
“Rhizobacteria-induced resistance perturbs viral disease progress in tobacco and triggers defense-related gene expression.”
2001. 10. Annual Meeting of Korean Society of Plant Pathology (Kyongju, Korea)
“Resistance induced by benzothiadiazole perturbs the biotroph-rice interaction, but did not necrotroph-rice one.”

2001. 10. Annual Meeting of Korean Society of Plant Pathology (Kyongju, Korea)
 “Anti-spore adhesion and induced systemic resistance in cucumber by extrapolsaccharide (EPS) of *Burkholderia cepacia* 923-87.”
2003. 8. Chungbuk National University (Chungju, Korea)
 "Prepenetration morphogenesis and vegetative compatibility grouping of *Colletotrichum* species infecting red pepper."
2003. 9. Korean Society of Cellular and Molecular Biology, (Seoul, Korea)
 “Calcium restores prepenetration morphogenesis abolished by polyamines in *Colletotrichum gloeosporioides* infecting red pepper."
2003. 9. Korean Society of Cellular and Molecular Biology, (Seoul, Korea)
 "Identification of thiamine-inducible Arabidopsis genes by suppression subtractive hybridization.”
2004. 4. Crop Functional Genomics Conferences, (Seoul, Korea)
 "Characterization of *OsFIE*, a polycomb group gene in *Oryza sativa*.”
2004. 4. Crop Functional Genomics Conferences (Seoul, Korea)
 "Search for tissue-specific promoters in Arabidopsis"
2004. 4. Crop Functional Genomics Conferences, (Seoul, Korea)
 "Using Arabidopsis to study subcellular-targetting"

Posters (Overseas only)

- 1999.3. 20th Fungal Genetics Conference (Asilomar, CA, USA)
 “A viral infection upregulates fungal virulence in *Nectria radicularis*.”
- 1997.8. 1997 APS Annual Meeting (Rochester, NY, USA)
 “Characterization of dsRNAs in *Nectria radicularis*, the Korean ginseng root rot fungus.”
2004. 7. 2004 APS Annual Meeting (Anaheim, CA, USA)
 “Defense mechanism of rice against *Cochliobolus miyabeanus* is distinct from that against *Magnaporthe grisea*”

REFERENCES

Dr. Yong-Hwan Lee

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Dr. Choong-Hoe Kim

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