Curriculum Vitae

NAM-SOO JWA, Ph.D
Professor
Dept. Molecular Biology
Sejong University
98 Gunja-dong, Gwangjin-gu
Seoul, 143-747
Korea
Date of Birth : August 9, 1964

Education records.
1983-1990 : BS Agrobiology, Seoul National University, Korea
1990-1992 : MS Agrobiology, Seoul National University, Korea
1992-1997 : Ph. D Plant Pathology, University of California, Riverside

Career
1997-1999 : Post doc in National Institute of Agrobiological Resources, Japan
1999-2001 : Post doc in Seoul National University Korea
2001-Current : Associate Professor in the department of Molecular Biology

Major Research papers

A) SCI Publication records

Agrawal GK, **Jwa NS**, Rakwal R (2000) A novel rice (Oryza sativa L.) acidic PR1 gene highly responsive to cut, phytohormones, and protein phosphatase inhibitors. Biochem Biophys Res Commun 274(1):157-165

Nishimura M, Hayashi N, **Jwa NS**, Lau GW, Hamer JE, Hasebe A (2000) Insertion of the LINE retrotransposon MGL causes a conidiophore pattern mutation in Magnaporthe grisea. Mol Plant Microbe Interact 13(8):892-894

Agrawal GK, Rakwal R, **Jwa NS** (2000) Rice (*Oryza sativa* L.) OsPR1b gene is phytohormonally regulated in close interaction with light signals Biochem Biophys Res Commun 278(2):290-298

Rakwal R, Kumar Agrawal G, **Jwa NS** (2001) Characterization of a rice (*Oryza sativa* L.) Bowman-Birk proteinase inhibitor: tightly light regulated induction in response to cut, jasmonic acid, ethylene and protein phosphatase 2A inhibitors. Gene 263(1):189-198

Agrawal, GK, Rakwal, R. & **Jwa, NS** (2001) Differential induction of three pathogenesis-related genes, PR10, PR1b and PR5 by the ethylene generator ethephon under light and dark in rice (*Oryza sativa* L.) seedlings. J. Plant Physiol 158(1):133-137

Jwa NS, LL Walling (2001) Influence of elevated CO2 concentration on disease development in tomato. New Phytologist 149(3):509-518

Kim S, Ahn IP, Park CH, Park SG, Park SY, **Jwa NS,** Lee YH (2001) Molecular characterization of the cDNA encoding an acidic isoform of PR-1 protein in rice. Mol Cells 11(1):115-121

Agrawal GK, Rakwal R, **Jwa NS** (2001) Stress signaling molecules involved in defense and protein phosphatase 2A inhibitors modulate OsCATC expression in rice (*Oryza sativa* L.) Journal of Plant Physiology 158(10)1349-1355

Nam-Soo Jwa, Ganesh Kumar Agrawal, Randeep Rakwal, Chan-Ho Park, and Vishwanath Prasad Agrawala (2001) Molecular Cloning and Characterization of a Novel Jasmonate

Inducible Pathogenesis-Related Class 10 Protein Gene, *JIOsPR10*, from Rice (*Oryza sativa* L.) Seedling Leaves. Biochem. Biophys. Res. Commun. 286(5):973-986

Ganesh Kumar Agrawal, Randeep Rakwal, **Nam-Soo Jwa**, Vishwanath Prasad Agrawala (2001) Signaling molecules and blast pathogen attack activates rice *OsPR1a* and *OsPR1b* genes: A model illustrating components participating during defense/stress response Plant Physiol. and Biochem. 39(12):1095-1103

Ganesh Kumar Agrawal, Randeep Rakwal, and **Nam-Soo Jwa** (2002, 1) Cloning and characterization of a jasmonate inducible rice (*Oryza sativa* L.) peroxidase gene, *OsPOX*, against global signaling molecules and certain inhibitors of kinase-signaling cascade(s) Plant Science 162(1):49-58

Ganesh Kumar Agrawal, Randeep Rakwal, **Nam-Soo Jwa**, Vishwanath Prasad Agrawal (2002) *Oryza sativa* proteinase inhibitor gene, *OsPIN*, whose mRNA specifically accumulates in a compatible host-blast pathogen interaction. Plant Physiol. and Biochem. Vol 40 (2):175-182

Ganesh Kumar Agrawal, Randeep Rakwal, **Nam-Soo Jwa**, Vishwanath Prasad Agrawal (2002) Effects of signaling molecules, protein phosphatase inhibitors and blast pathogen (*Magnaporthe grisea*) on the mRNA level of a rice (*Oryza sativa* L.) phospholipid hydroperoxide glutathione peroxidase (*OsPHGPX*) gene in seedling leaves Gene 283 (1/2):227-236

Nam-Soo Jwa, Ganesh Kumar Agrawal, Randeep Rakwal, Jung-A Kim, Vishwanath Prasad Agrawal (2002, 12) Differential regulation of an early and late responsive rice endosperm kinase mRNA in seedling leaves. Plant Physiol. and Biochem. Vol 40(12): 1025-1031

Ganesh Kumar Agrawal, Randeep Rakwal, **Nam-Soo Jwa**, Keon-Seon Han, Vishwanath Prasad Agrawal (2002) Molecular cloning and mRNA expression analysis of the first rice jasmonate biosynthetic pathway gene allene oxide synthase. Plant Physiology and Biochemistry 40: 771-782.

Ganesh Kumar Agrawal, Randeep Rakwal, **Nam-Soo Jwa**, Vishwanath Prasad Agrawal (2002) Characterization of a novel rice gene OsATX and modulation of its expression by components of the stress signalling pathways. Physiologia Plantarum 116: 87-95

Ganesh Kumar Agrawal, **Nam-Soo Jwa,** Randeep Rakwal (2002, 12) A pathogen-induced novel rice (*Oryza sativa* L.) gene encodes a putative protein homologous to type II glutathione S-transferases. Plant Science 163(6): 1153-1160

Jung-A Kim, Ganesh Kumar Agrawal, Randeep Rakwal, Keon-Seon Han, Kyung-Nam-Kim, Choong-Hyo Yun, Sunggi Heu, Sook-Young Park, Yong-Hwan Lee, and **Nam-Soo Jwa** (2003, 1) Molecular cloning and mRNA expression analysis of a novel rice (Oryza sativa L.) MAPK kinase kinase, OsEDR1, an ortholog of Arabidopsis AtEDR1, reveal its role in defense/stress signalling pathways and development. Biochem. Biophys. Res. Commun. 300: 868-876

Ganesh Kumar Agrawal, **Nam-Soo Jwa,** Keon-Seon Han, Vishwanath Prasad Agrawal, Randeep Rakwal (2003, 01) Isolation of a novel rice PR4 type gene whose mRNA expression is modulated by blast pathogen attack and signaling components, Plant Physiology and Biochemistry 41(1) 81-90

Ganesh Kumar Agrawal, **Nam-Soo Jwa,** Shyam Kumar Agrawal, Shigeru Tamogami, Hitoshi Iwahashi, Randeep Rakwal (2003,06) Cloning of novel rice allen oxide cyclase(OsAOC): mRNA expression and comparative analysis with allen oxide synthase(OsAOS) gene provides insight into the transcriptional regulation of octadecanoid pathway biosynthetic genes in rice. Plant Science 164:979-992

Ganesh K. Agrawal, **Nam-Soo Jwa**, Junko Shibato, Oksoo Han, Hitoshi Iwahashi and Randeep Rakwal (2003,10) Diverse environmental cues transiently regulate *OsOPR1* of the

"octadecanoid pathway" revealing its importance in rice defense/stress and development Biochem. Biophys. Res. Commun. 310:1073-1082

Ganesh Kumar Agrawal, **Nam-Soo Jwa,** Hitoshi Iwahashi, Randeep Rakwal (2003,08) Importance of ascorbate peroxidases OsAPX1 and OsAPX2 in the rice pathogen response pathways and growth and reproduction revealed by their transcriptional profiling. Gene 322:93-103

Chan-Ho Park, Soonok Kim, Ju-Young Park, Il-Pyung Ahn, Nam-Soo Jwa, Kyung-Hwan Im, and Yong-Hwan Lee (2004) Molecular characterization of a pathogenesis-related protein 8 gene encoding a class III chitinase in rice. Mol. Cells 17(1): 144-150

Young-Ho Jung, Joo-Hee Lee, Ganesh Kumar Agrawal, Randeep Rakwal, Jung-A Kim, Sang-Kyu Lee, Jong-Seong Jeon, Hee-Jong Koh, Yong-Hwan Lee, **Nam-Soo Jwa** (2005) Rice (*Oryza sativa*) *B*last *L*esion *M*imic Mutant, *Osblm*, Confers Resistance to Pathogens by Trigerring Multiple Defense-Associated Signaling Pathway. Plant Physiology and Biochemistry 43(4) 397-406

Hye Jin Jeong, **Nam-Soo Jwa**, and Kyung-Nam Kim (2005) Identification and characterization of protein kinases that interact with the CBL3 calcium sensor in Arabidopsis Plant Science 169(12):1125-1135

Dea-Wook Kim, Randeep Rakwal, Ganesh Kumar Agrawal, Young-Ho Jung, Junko Shibato, **Nam-Soo Jwa**, Yumiko Iwahashi, Hitoshi Iwahashi, Du Hyun Kim, Ie-Sung Shim and Kenji Usui (2005) A hydroponic rice seedling culture model system for investigating proteome of salt stress in rice leaf. Electrophoresis 26: 4521-4539

Hye-Kyung Kim, Sang-Kyu Lee, Jung-Il Cho, Sichul Lee, Gynheung An, **Nam-Soo Jwa**, Byung-Ryun Kim, Young-Chan Cho, Seong-Sook Han, Seon-Hee Bhoo, Youn-Hyung Lee, Yeon-Kyu Hong, Gihwang-Yi, Dae-Sup Park, Tae-Ryong Hahn and Jong-Seong Jeon (2005) Characterization of rice mutants with enhanced susceptiblity to rice blast. Mol Cells 20: 385-391

Mi-Ok Lee, Sun-Hyung Kim, Pil-Gyu Choi, Jung-A Kim, Young-Ho Jung, Seung-Hee Jung, So Hee Kim, Sang-Kyu Lee, Jong-Seong Jeon, **Nam-Soo Jwa** (2006) *Two novel protein kinases, OsMSRPK1 and OsMSURPK2 that regulates diverse biotic and abiotic stresses in rice.* Journal of Plant Biology 49: 247-256

Young-Ho Jung, Ganesh Kumar Agrawalb, Randeep Rakwal, Jung-A Kim, Mi-Ok Lee, Pil-Gyu Choi, Young Jin Kim, Junko Shibato, Sun-Hyung Kim, Hitoshi Iwahashi, **Nam-Soo Jwa** (2006) Functional characterization of *OsRacB* GTPase a negative regulator of basal disease resistance in rice. Plant Physiology and Biochemistry 44(1): 68-77

Rena Matsumoto, Randeep Rakwal, Ganesh Kumar Agrawal, Young-Ho Jung, **Nam-Soo Jwa**, Masami Yonekura, Hitoshi Iwahashi, and Kuniko Akama (2006) Search for Novel Stress-responsive Protein Components Using a Yeast Mutant Lacking Two Cytosolic Hsp70 Genes, SSA1 and
SSA2. Mol. Cells, Vol. 21(3), pp. 381-388

Nam-Soo Jwa, Ganesh Kumar Agrawal, Shigeru Tamogamic, Masami Yonekurad, Oksoo Hane, Hitoshi Iwahashif, Randeep Rakwal (2006) Role of defense/stress-related marker genes, proteins and secondary metabolites in defining rice self-defense mechanisms. Plant Physiology and Biochemistry 44(6): 261-273

Young-Ho Jung, Randeep Rakwal, Ganesh Kumar Agrawal, Junko Shibato, Jung-A Kim, Mi Ok Lee, Pil-Kyu Choi, Seung-Hee Jung, So Hee Kim, Hee-Jong Koh, Masami Yonekura, Hitoshi Iwahashi, and **Nam-Soo Jwa** (2006) Differential Expression of Defense/Stress-Related Marker Proteins in Leaves of a Unique Rice Blast Lesion Mimic Mutant (*blm*). Journal of Proteome Research 5: 2586-2598

Ganesh Kumar Agrawal, **Nam-Soo Jwa**, Yumiko Iwahashi, Masami Yonekura, Hitoshi Iwahashi and Randeep Rakwal(2006) Rejuvenating rice proteomics: Facts, challenges, and visions. Proteomics 2006, 6: 5549-5576

Kyoungwon Cho, Ganesh Kumar Agrawal, Junko Shibato,Young-Ho Jung, Yeon-Ki Kim, Baek Hie Nahm, **Nam-Soo Jwa**, Shigeru Tamogami, Oksoo Han, Kimiyoshi Kohda, Hitoshi Iwahashi, and shRandeep Rakwal (2007) Survey of Differentially Expressed Proteins and Genes in Jasmonic Acid Treated Rice Seedling Shoot and Root at the Proteomics and Transcriptomics Levels. Journal of Proteom Research 6: 3581-3603

Kyoungwon Cho, Dea-Wook Kim, Young-Ho Jung, Junko Shibato, Shigeru Tamogami, Masami Yonekura, **Nam-Soo Jwa**, Akihiro Kubo Ganesh Kumar Agrawal, and Randeep Rakwal (2007) Light/Dark responsiveness of Kinetin-inducible secondary metabolites and stress in rice leaf. J. Crop. Sci. Biotech. 10(2): 112-116.

Nilka Lineth Torres, Kyoungwon Cho, Junko Shibato,,Misato Hirano, Akihiro Kubo, Yoshinori Masuo, Hitoshi Iwahashi, **Nam-Soo Jwa**, Ganesh Kumar Agrawal, Randeep Rakwal (2007) Gel-based proteomics reveals potential novel protein markers of ozone stress in leaves of cultivated bean and maize species of Panama. Electrophoresis 28. 4369-4381

Mi-Ok Lee, Kyoungwon Cho, So-Hee Kim, Seung-Hee Jeong, Jung-A Kim, Young-Ho Jung, Jaekyung Shim, Junko Shibato, Randeep Rakwal, Shigeru Tamogami, Akihiro Kubo**,** Ganesh Kumar Agrawal, **Nam-Soo Jwa** (2008) Novel rice *OsSIPK* is a multiple stress responsive MAPK family member showing rhythmic expression at mRNA level. Planta 227(5): 981-990

Woo MO, Ham TH, Ji HS, Choi MS, Jiang W, Chu SH, Piao R, Chin JH, Kim JA, Park BS, Seo HS, **Jwa NS**, McCouch S, Koh HJ. (2008) Inactivation of the UGPase1 gene causes genic male sterility and endosperm chalkiness in rice (*Oryza sativa L.*). Plant J. 54(2): 190-204

Rakwal R, Kimura S, Shibato J, Nojima K, Kim YK, Nahm BH, **Jwa NS**, Endo S, Tanaka K, Iwahashi H. (2008) Growth retardation and death of rice plants irradiated with carbon ion beams is preceded by very early dose- and time-dependent gene expression changes. Moll Cells 25(2): 272-278

Cho K, Shibato J, Agrawal GK, Jung YH, Kubo A, **Jwa NS**, Tamogami S, Satoh K, Kikuchi S, Higashi T, Kimura S, Saji H, Tanaka Y, Iwahashi H, Masuo Y, Rakwal R. (2008) Integrated transcriptomics, proteomics, and metabolomics analyses to survey ozone responses in the leaves of rice seedling. Journal of Proteome Res. 7(7): 2980-2998

Young-Ho Jung, Seung-Hee Jeong, So Hee Kim, Raksha Singh, Jae-eun Lee, Yoon-Seong Cho, Ganesh Kumar Agrawal, Randeep Rakwal, and Nam-Soo Jwa (2008) Systematic Secretome Analyses of Rice Leaf and Seed Callus Suspension-Cultured Cells: Workflow Development and Establishment of High-Density Two-Dimensional Gel Reference Maps. Journal of Proteome Res. 7(12): 5187-5210

Kyoungwon Cho, Ganesh Kumar Agrawal, **Nam-Soo Jwa**, Akihiro Kubo, Randeep Rakwal (2009) Rice OsSIPK and its Orthologs: A "Central Master Switch" for Stress Responses. Biochemical and Biophysical Research Communications 379(3): 649-653

Ganesh Kumar Agrawal, **Nam-Soo Jwa** and Randeep Rakwal (2009) Rice proteomics: Ending phase I and the beginning of phase II. Proteomics 9(4): 935-963

Jung-A Kim, Kyoungwon Cho, Raksha Singh, Young-Ho Jung, Seung-Hee Jeong, So-Hee Kim, Jae-eun Lee, Yoon-Seong Cho, Ganesh K. Agrawal, Randeep Rakwal, Shigeru Tamogami, Birgit Kersten, Jong-Seong Jeon, Gynheung An, and **Nam-Soo Jwa** (2009) Rice OsACDR1 (Oryza sativa) Accelerated Cell Death and Resistance 1) Is a Potential Positive Regulator of Fungal Disease Resistance. Mol. Cells 2009 28(5):431-439

Ganesh Kumar Agrawal, **Nam-Soo Jwa**, Marc-HenriLebrun, Dominique Job and Randeep Rakwal (2010) Plant secretome: Unlocking secrets of the secreted proteins. Proteomics 10: 1-29

Oliver A. H. Jones, Mahon L. Maguire, Julian L. Griffin, Young-Ho Jung, Junko Shibato, Randeep Rakwal, Ganesh K. Agrawal, **Nam-Soo Jwa** (2010) Using metabolic profiling to assess plant-pathogen interactions: an example using rice (Oryza sativa) and the blast pathogen Magnaporthe grisea Eur J Plant Pathol DOI 10.1007/s10658-010-9718-6

Serry Koh, Hongsup Kim, Jinwoo Kim, Eunhye Goo, Yun-Jung Kim, Okhee Choi, **Nam-Soo Jwa**, Jun Ma, Tomohisa Nagamatsu, Jae Sun Moon1, and Ingyu Hwang (2010) A novel light-dependent selection marker system in plants Plant Biotechnology Journal doi: 10.1111/j.1467-7652.2010.00557