

HONG-GU KANG, Ph.D.

Associate Professor
Department of Biology

Texas State University
601 University Drive
San Marcos, TX 78666
voice) 512 -245-7508
e-mail) kang@txstate.edu
web) kanglab.info

1. PROFESSIONAL APPOINTMENTS

<i>Position</i>	<i>University</i>	<i>Dates</i>
Associate Professor	Texas State University	2017 - present
Assistant Professor	Texas State University	2012 - 2017
Senior Research Associate	Boyce Thompson Institute at Cornell Univ.	2009 – 2011

2. EDUCATIONAL BACKGROUND

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>	<i>Advisor</i>
Postdoc	2000-2009	Cornell U; Boyce Thompson Inst.	Molecular Plant Pathology	Dr. Dan Klessig
Ph.D.	1994-2000	U of California, Los Angeles	Molecular Cell Biology	Dr. Karam Singh
M.S.	1992-1994	Seoul National University, Korea	Plant Molecular Biology	Dr. Yang Do Choi
B.S.	1988-1992	Seoul National University, Korea	Agricultural Chemistry	

3. TEACHING

<i>Course</i>	<i>Title</i>	<i>Date</i>
BIO 7361C	Advanced Genomics and Bioinformatics	2017 - 2020
BIO 4370/5370	Genome Informatics	2018 - 2020
BIO 4441/5441	Cell Physiology	2013 – 2020; 2022 -
BIO 4480/5480	Cytology and Microtechnique	2012 – 2016; 2021 -
BIO 7102/5110	Seminar	2020 -

4. GRANT

- NSF-CAREER (2016-2023; PI). Characterization of epigenetic factors and their regulatory roles in modulating transposable elements, plant immunity and transgenerational inheritance.
- Texas State University Multi-disciplinary Internal Research Grant (2014-2015; PI). Development of EIS-based device sensing epigenetic changes for early cancer detection.

5. PUBLICATIONS (after joining Texas State in 2012)

- Kim SI, Bordiya Y, Lyu H, Pujara DS, Mayorga J, Zogli JK, Chung H, Kim J, Louis J, Yu Q, and **Kang HG** (2024) A nuclear tRNA-derived fragment triggers immunity in Arabidopsis. *Nature Communications*, In 3rd round of reviews
- Rahman M, Haque A, Pujara DS, Mayorga J, **Kang HG**, Valles D (2024) Automation of luminescence quantitation for high-throughput plant phenotyping using classical image processing and deep learning technique. *Principles of Data Science*, Accepted
- Nam JC, Bhatt PS, Bonnard A, Pujara DS and **Kang HG** (2024) Arabidopsis MORC1 and MED9 interact to regulate defense gene expression and plant fitness. 40: 438-450. *Plant Pathology Journal*
- Nam JC, Bhatt PS, Kim SI, and **Kang HG**. (2023) Co-immunoprecipitation for assessing protein-protein interactions in Agrobacterium-mediated transient expression system in *Nicotiana benthamiana*, 2690:101-110. *Methods in Molecular Biology*
- Pujara DS, Kim SI, Nam JC, Mayorga J, Elmore I, Kumar M, Koiwa H, and **Kang HG** (2021) Imaging-based resistance assay using enhanced luminescence-tagged *Pseudomonas syringae* revealed a complex epigenetic network in plant defense signaling pathways. 34:990-1000, *Molecular Plant-Microbe Interaction*
- Kim SI, Bordiya Y, Nam JC, Mayorga J, and **Kang HG** (2021) High-throughput targeted transcriptional profiling of defense genes using RNA-mediated oligonucleotide Annealing, Selection, and Ligation with next-generation sequencing in Arabidopsis. 2328, 227-252. *Methods in Molecular Biology*
- Makhijaa G, Pujarab DS, Song I, You BH, **Kang HG**. (2020) Constructing an automation table for an image-

- based Arabidopsis resistance assay. 6, 495–499. *Engineering*
- Koch A, Kang HG, Steinbrenner J, Dempsey DA, Klessig DF, Kogel KH. (2017) MORC Proteins: Novel Players in Plant and Animal Health. 8, 1720. *Front Plant Sci.*
 - Bordiya Y and **Kang HG**. (2017) Genome-wide analysis of chromatin accessibility in Arabidopsis infected with *Pseudomonas syringae*. 1578, 263-272. *Methods in Molecular Biology*
 - Bordiya Y, Zheng Y, Nam JC, Choi HW, Lee BK, Kim J, Klessig DF, Fei Z and **Kang HG**. (2016) Pathogen Infection and MORC proteins Affect Chromatin Accessibility of Transposable Elements and Expression of Their Proximal Genes in Arabidopsis. 29, 674-687. *Molecular Plant-Microbe Interactions*
 - DeFalco TA, Marshall CB, Munro K, **Kang HG**, Moeder W, Ikura M, Snedden WA, Yoshioka K. (2016) Multiple calmodulin-binding sites positively and negatively regulate Arabidopsis CYCLIC NUCLEOTIDE-GATED CHANNEL. 28, 1738-1751. *Plant Cell*
 - Moon JY, Oh CS, Lee JH, **Kang HG**, and Park JM. (2016) Endoplasmic Reticulum Stress Responses Function in the HRT-mediated Hypersensitive Response in *Nicotiana benthamiana*. 17, 1382-1397. *Molecular Plant Pathology*
 - Manosalva P, Manohar M, Kogel KH, **Kang HG**, Klessig DF. (2015) The GHKL ATPase MORC1 Modulates Species-Specific Plant Immunity in *Solanaceae*. 28:927-42, *Molecular Plant-Microbe Interactions*
 - Langen G, von Einem S, Koch A, Imani J, Pai SB, Manohar M, Ehlers K, Choi HW, Claar M, Schmidt R, Mang HG, Bordiya Y, **Kang HG**, Klessig DF, Kogel KH. (2014) The CRT1 subfamily of MORC ATPases Regulates Disease Resistance in Barley to Biotrophic and Necrotrophic Pathogens. 164:866-78, *Plant Physiology*
 - **Kang HG***, Woo Choi H, von Einem S, Manosalva P, Ehlers K, Liu PP, Buxa SV, Moreau M, Mang HG, Kachroo P, Kogel KH, Klessig DF*. (2012) CRT1 is a nuclear-translocated MORC endonuclease that participates in multiple levels of plant immunity. 3: 1297, *Nature Communications* (*co-correspondence)
 - Mang HG, Qian W, Zhu Y, Qian J, **Kang HG**, Klessig DF, Hua J. (2012) Abscisic Acid Deficiency Antagonizes High-Temperature Inhibition of Disease Resistance through Enhancing Nuclear Accumulation of Resistance Proteins SNC1 and RPS4 in Arabidopsis. 24: 1271-84, *Plant Cell*

6. POSTDOCTORAL FELLOWS MENTORED at TEXAS STATE

- Dr. Dinesh Pujara (2024): Postdoctoral Associate, Cornell University
- Dr. Sungil Kim (2016 – 2021): Research Associate, Texas A&M University
- Dr. Hyung Gon Mang (2012 – 2013): Research Scientist, National Institute of Crop Science, Korea

7. PATENT

- Kang, HG and Kim SI (2022) MODULATING STRESS RESPONSES BY A NOVEL CHROMATIN-ASSOCIATED GUIDE RNA DERIVED FROM TRANSFER RNA – A full application under review

8. PROFESSIONAL ACTIVITIES

- **Grant Panelist**
 - NSF-IOS (2014; 2016; 2020; 2022)
 - USDA-NIFA (2016)
- **Grant Ad Hoc Reviewer**
 - NSF-IOS (2018)
 - Hungary National Research, Development and Innovation Office (2015)
 - German-Israeli Foundation for Scientific Research and Development (2012)
- **Symposium Chair:**
 - Epigenetics Session, Annual meeting of the American Society of Plant Biologists (2015)
 - Plant Pathogen Interactions Session, Annual meeting of the American Society of Plant Biologists (2008)
- **Journal Reviewer:**
 - *Trends in Plant Sciences, Plant Cell, Plant Physiology, Plant Journal, BMC-Plant Biology, Planta, Molecular Plant Pathology, PLoS Pathogens, Frontiers in Plant Science, Frontiers in Microbiology, Plant Physiology and Biochemistry, Molecular Plant-Microbe Interactions*
- **Journal Editor:**
 - *Frontiers in Plant Science* (Review editor: 2015 – present)
 - *Molecular Plant-Microbe Interactions* (Associate editor: 2016 - 2019)

- *Plant Biotechnology Reports* (Editorial Board: 2019 – present)
- **Science Fair Judge:**
 - Alamo Regional Academy of Science and Engineering (2017; 2019)
 - ExxonMobil Texas Science and Engineering Fair (2014; 2015)
 - Austin Energy Regional Science Festival (2014; 2015; 2016)
 - Bowie High School Science Fair (2013; 2014; 2015)
- **Institutional Biosafety Committee:**
 - Chair (2021 – present)
 - Member (2014- 2021)
- **KSEA:**
 - President, Austin Chapter (2017 – 2020)
 - Vice-president, Austin Chapter (2013- 2016)

9. FELLOWSHIPS, AWARDS, HONORS

- 2020: Presidential Research Award, Texas State University
- 2017: College Achievement Awards, College of Science & Engineering, Texas State University
- 2016: NSF CAREER Award
- 2015: ASPB Recognition Travel Award - American Society of Plant Biologist, Minneapolis, MN
- 2013: Travel Award – Plant Biology 2013 - American Society of Plant Biologist, Providence, RI
- 2013: Travel Award – International Conference on Arabidopsis Research, Sydney, Australia
- 2013: Travel Award - Scientists and Engineers Early Career Development (SEECD) Workshop, Korean-American Scientist and Engineer Association, Atlanta, GA
- 1994-1997: Korean Ministry of Education Pre-doctoral Fellowship