

Curriculum Vitae

Min-Ji Kim

Ph. D. candidate
Department of Applied Biosciences
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Education Background

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| Mar.2021 – Current | Ph.D. of Agriculture Kyungpook National University
<i>Department of Applied Biosciences</i>
Dissertation: Working title_ Understanding Hazards Derived from Microbes in Agricultural Environment using Multi-Omics Approach: Antibiotic Resistance Genes and Microcystin
Advisor: Jae-Ho Shin, Ph.D. |
| Mar.2019 – Feb.2021 | M.S. of Agriculture Kyungpook National University
<i>Department of Applied Biosciences</i>
Thesis: Effect of bioconverted product of <i>Lotus corniculatus</i> seed on body odor and axillary microbiome
Advisor: Jae-Ho Shin, Ph.D. |
| Mar.2014 – Feb.2019 | B.S. of Environment and Life Science, integrated major in Bioinformatics Kyungpook National University
<i>College of Agriculture and Life Sciences, School of Applied Biosciences</i> |

Research Interests

Environmental Metagenomics in One-Health Approach

Antibiotic Resistance Genes
Cyanobacterial Blooms, Cyanotoxins, Microplastics
Host-Microbe Interactions

Publications

In preparation

1. **M.-J. Kim**, G. D. Lee, K. Lim, W. Kim, I. Kim, G. Nam, D. Kang, K. Kim, S. Lee, and J.-H. Shin*. "Co-acceleration of Dissemination of Antibiotic Resistance Genes and Cyanobacterial Blooms in Antibiotic Residues" *Journal of Hazardous Materials: in preparation*
2. **M.-J. Kim**[†], J.-M. Lee[†], H. Lee, E. S. Kim*, and J.-H. Shin*. "Longitudinal Changes in Gut Microbiota among DSS-induced Colitis Mothers and Their Offsprings." *Cell Host & Microbe: in preparation*
3. **M.-J. Kim**, D.-R. Jung, E.S. Kim, J.-H. Shin*. "Microbial Dysbiosis Index for Assessing Colitis Status in Mouse Models: A Systematic Review and Meta-Analysis." *Frontiers in Microbiology*:

under review

4. **M.-J. Kim**, D. Kang, G.D. Lee, J. K. S. Lee*, and J.-H. Shin*. "Uncovering the Interplays between Cyanobacterial Blooms and Antibiotic Resistance Genes." *Microbiome*: *under review*

Published

1. **M.-J. Kim**[†], T. H. Park[†], Y.-K. Lee, J. S. Lee, J. Lee, H. Y. Park, J. D. Yang*, and J.-H. Shin*. "Study of the Microbiome of the Contractured Breast Capsule Using Next Generation Sequencing." *Scientific Reports* (2023): *in press*
2. J. Kim[†], G.D. Lee[†], S. Han, **M.-J. Kim**, J.-H. Shin, S. Lee*. "Microbial Communities in Aerosol Generated from Cyanobacterial Bloom-affected Freshwater Bodies: an Exploratory Study in Nakdong River, South Korea." *Frontiers in Microbiology* (2023): *in press*
3. C.-E. Park, B.-J. Cho, **M.-J. Kim**, M.-C. Kim, M.-K. Park, J.-I. Son, H.-C. Park, J.-H. Shin*. "Ecoinformatic Analysis of the Gut Ecological Diversity of Wild and Captive Long-Tailed Gorals Using Improved ITS2 Region Primers to Support Their Conservation." *Microorganisms* 11.6 (2023): 1368
4. M. Jeong, S. B. Tagele, **M.-J. Kim**, S.H. Ko, K.-S. Kim, J.-G. Koh, D.-R. Jung, Y. J, Y.G. Jung, Y.-J. Park, M.-S. Kim, K. Lim, J.-H. Shin*. "The Death of Korean Fir (*Abies koreana*) Affects Soil Symbiotic Fungal Microbiome: Preliminary Findings." *Frontiers in Forests and Global Change* 5 (2023): 289
5. D.-R. Jung[†], H.-Y. Yoo[†], **M.-J. Kim**, V. Singh, S.-H. Park, M. Jeong, B.-J. Park* and J.-H. Shin*. "Comparative Analysis of Scalp and Gut Microbiome in Androgenetic Alopecia: A Korean Cross-sectional Study." *Frontiers in Microbiology* (2022): 4921
6. **M.-J. Kim**, T. H. Park, D.-R. Jung, G. D. Lee, and J.-H. Shin*. "Complete Genome sequence of *Bacillus inaquosorum* 1HC-NA assembled from the Oxford Nanopore sequencing data." *The Microbiological Society of Korea* 58.3 (2022): 194-196
7. **M.-J. Kim**, T. H. Park, M. Jeong, G. D. Lee, D.-R. Jung, and J.-H. Shin*. "Complete Genome Sequence of *Bacillus amyloliquefaciens* KNU-28 Isolated from Peach Leaves (*Prunus Persica* [L.] Batsch)." *Microbiology Resource Announcements* (2022): e00934-22
8. G. D. Lee, **M.-J. Kim**, and J.-H. Shin*. "Data on complete genome sequence and annotation of *Paenibacillus sonchi* LMG 24727^T." *Data in brief* 38 (2021): 107271.
9. C.-E. Park, B.-J. Cho, **M.-J. Kim**, H. C. Park, and J.-H. Shin*. "Geographical Relationships between Long-Tailed Goral (*Naemorhedus caudatus*) Populations Based on Gut Microbiome Analysis." *Microorganisms* 9.9 (2021): 2002.
10. **M.-J. Kim**, S. B. Tagele, H. W. Jo, M.-C. Kim, Y. G. Jung, Y.-J. Park, J.-H. So, H. J. Kim, H. J. Kim, D.-G. Lee, S. Kang, and J.-H. Shin*. "Effect of a bioconverted product of *Lotus corniculatus* seed on the axillary microbiome and body odor." *Scientific Reports* 11.1 (2021): 1-14.
11. T.-K. Hwang, Y.-J. Park, **M.-J. Kim**, G. D. Lee, R.-H. Kim, T.-I. Lee, S.-K. Park, and J.-H. Shin*. "Whole-genome sequence of *Bacillus aryabhattai* strain GW320, a potential plant growth-promoting rhizobacterium from *Cucumis sativus* L. rhizospheric soil." *The Microbiological Society of Korea* 57.1 (2021): 62-65.
12. Y.-J. Hwang, J.-S. Son, S.-Y. Lee, **M.-J. Kim**, J. M. Park, J.-H. Shin, S.-Y. Ghim*. "*Adhaeribacter radiodurans* sp. nov., isolated from the rhizospheric soil of *Elymus tsukushiensis*, a plant native to the Dokdo Islands, Republic of Korea." *International Journal of*

Systematic and Evolutionary Microbiology 71.1 (2021): 004612.

13. M.-K. Park, Y.-J. Park, **M.-J. Kim**, M.-C. Kim, J. C. Ibal, G.-U. Kang, G. D. Lee, S. B. Tagele, H.-J. Kwon, M.-S. Kang, M.-H. Kim, S.-Y. Kim, and J.-H. Shin*. "Complete genome sequence of a plant growth-promoting bacterium *Pseudarthrobacter* sp. NIBRBAC000502772, isolated from shooting range soil in the Republic of Korea." The Microbiological Society of Korea 56.4 (2020): 390-393.
14. **M.-J. Kim**, Y.-J. Park, M.-K. Park, C. E. Park, Y. J. Jo, S. B. Tagele, and J.-H. Shin*. "Complete genome sequence of *Labrys* sp. KNU-23 isolated from ginseng soil in the Republic of Korea." The Microbiological Society of Korea 56.4 (2020): 410-412.
15. H. W. Jo, S. B. Tagele, H. Q. Pham, M.-C. Kim, S.-D. Choi, **M.-J. Kim**, Y.-J. Park, J. C. Ibal, G.-S. Park, and J.-H. Shin*. "Response of soil bacterial community and pepper plant growth to application of *Bacillus thuringiensis* KNU-07." Agronomy 10.4 (2020): 551.
16. C. E. Park, Y.-J. Park, M.-C. Kim, M.-K. Park, Y. G. Jung, S.-D. Choi, Y. J. Jo, G.-U. Kang, **M.-J. Kim**, Q. X. Li, B. A. Yoza, K.-H. Kim, H. C. Park, and J.-H. Shin*. "The first complete mitochondrial genome sequence of the Korean endemic catfish *Silurus microdorsalis* (Actinopteri, Siluriformes, Siluridae)." Mitochondrial DNA Part B 5.1 (2020): 131-132.
17. M.-K. Park, Y.-J. Park, M.-C. Kim, G.-U. Kang, **M.-J. Kim**, Y. J. Jo, H.-J. Kwon, M.-S. Kang, M.-H. Kim, S.-Y. Kim, and J.-H. Shin*. "Complete genome sequence of *Pseudarthrobacter* sp. NIBRBAC000502771 isolated from shooting range soil in Republic of Korea." The Microbiological Society of Korea 55.4 (2019): 419-421.

Patents

1. "Bacterial-based Hair Loss Diagnosis Biomarkers and Models through Machine Learning" (2022): - collaborate with Kolmar Korea
2. "Novel *Pseudomonas chlororaphis* KNU-10 Strain with Phosphate Solubilization, Urea Solubilization and Antifungal Activity, and Uses thereof" (2021): 10-2295067-00-00
3. "Novel *Beauveria bassiana* KNU-101 strain with insecticidal effect and uses thereof" (2021): 10-2251508-00-00
4. "*Labrys neptuniae* KNU-23 strain having plant growth promoting effect, and uses thereof" (2021): 10-2204522-00-00
5. "Composition for preventing or improving Osmidrosis axillae comprising Seed fermented of *Lotus* spp. plant" (2020): PCT/KR2021/008182 – collaborate with COSMAX R&I
6. "Composition for preventing or improving Osmidrosis axillae comprising *Corydalis remota* extract" (2020): PCT/KR2021/008204 - collaborate with COSMAX R&I
7. "*Pantoea ananatis* strain and skin condition improving uses of thereof" (2020): 10-2020-0069097 - collaborate with COSMAX R&I
8. "*Microbacterium oleivorans* strain and skin condition improving uses of thereof" (2020): 10-2020-0069096 - collaborate with COSMAX R&I

Skills and Techniques

Molecular biology techniques	Nucleic acid isolation, PCR (RT-PCR, RT-qPCR, dPCR and ddPCR) Gene cloning, CRISPR, Scanning Electron Microscope
Sequencing instruments	2 nd generation NGS: Illumina Miseq, Novaseq and ThermoFisher IonTorrent 3 rd generation NGS: Oxford Nanopore MinION, MGI DNBSeg, PacBio RSII and Sequel
Analytical instruments	LC-MS/MS, LC-Q-TOF-MS, Ion Chromatography
Bioinformatics skills	Python, R <ul style="list-style-type: none">- Whole genome sequencing data processing- Amplicon, Shotgun metagenome data processing- Transcriptome, Metatranscriptome data processing- Machine learning and deep learning- Statistical analysis

Grants and International presentation

Grants

Grant #	Min-Ji Kim
Funding Organization	National Research Foundation of Korea (NRF), the Ministry of Education
Amount Awarded	USD 300,000
Period of Grant Award	2 years
Title of Project	Characterization of association between algal blooms and antibiotic resistance genes in the environmental microbiome

International presentation

- “Microbial Dysbiosis in Freshwater Environment during Cyanobacterial Blooms is associated with Dissemination of Antibiotic Resistance Genes”, 2023, ASM Microbe 2023 – poster presentation
- “Dynamics of microbiome and resistome during cyanobacterial harmful algal blooms”, 2022, CSHL Meeting Microbiome – poster presentation
- “Occurrences and Distribution of Mobile Antibiotic Resistome in the Nakdong River”, 2022, 49th KMB International Symposium – poster presentation
- “Dynamics of Microbiome and Antibiotic Resistome in the Nakdong River”, 2022, KSABC International Symposium – poster presentation
- “Effect of a Bioconverted Product of *Lotus corniculatus* Seed on the Axillary Microbiome and Body Odor”, 2021, 48th KMB International Symposium – oral presentation

Awards and Honors

2022	Ministerial Commendation, Korea Environmental Industry & Technology Institute, Seoul, Korea Best poster presentation award, 49 th KMB International Symposium, Gyeongju, Korea Best oral presentation award, BK21 Research Performance Presentation, Daegu, Korea USD 1,400 Excellent thesis award, Kyungpook National University, Daegu, Korea USD 210
2021	Research award, 6 th mBiome International Conference, Seoul, Korea

- Academic Excellence Scholarship, Kyungpook National University
USD 420
- 2018 Top Prize, Korea Agro-Fisheries & Food Trade Corporation, Korea
USD 700
- 2014 Academic Excellence Scholarship, Kyungpook National University
USD 420

Extracurricular Activities

- 2018 Young Agri-Food Fellowship, Korea Agro-Fisheries & Food Trade Corporation, Korea
- 2017 Exchange student, Lleida University, Spain
- 2015 Public relations manager, Student Council, School of Applied Biosciences

References

Professor Jae-Ho Shin, Ph.D.

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Professor Seungjun Lee, Ph.D

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