

CURRICULUM VITAE

1. Name-in-full: Dae-Kyung Kang

2. Present position

Professor, Lab. of Microbiology and Biotechnology, Dept. of Animal Resources Science,
College of Biotechnology and Bioengineering, Dankook University, Republic of Korea

3. Education

- Mar. 1999 Dept. of Biotechnology, The University of Tokyo, Japan (Ph.D.)
- Feb. 1988 Dept. of Animal Science and Technology, Seoul National University, Korea (MS)
- Feb. 1986 Dept. of Animal Science and Technology, Seoul National University, Korea (BS)

4. Professional experiences

- Mar. 2006 ~ present Professor, Dankook University
- Dec. 2000 ~ Feb. 2006 Head of the Bio-Resources Institute, EASY BIO, Inc, Korea
- June 1999 ~ Nov. 2000 Visiting Fellow, National Institutes of Health, USA
- Apr. 1999 ~ May 1999 Research Associate, The University of Tokyo, Japan
- Jan. 1988 ~ Sept. 1995 Senior Researcher, Technical Research Institute, DongSuh Foods Corp, Korea

5. Awards

- Plaque for Merit, Korean Society of Dairy Science and Technology, Korea (2021)
- Best Science and Technology Thesis Awards, The Korean Federation of Science and Technology, Korea (2019)
- Academic Award, Korean Society for Food Science of Animal Resources, Korea (2018)
- Achievement Award for Journal Internationalization, Korean Society for Food Science of Animal Resources, Korea (2016)
- Korean Yakult Science Award, Korean Society for Food Science of Animal Resources, Korea (2013)
- Best Teaching Award, Dankook University, Korea (2009)
- Award for Young Investigators, The Oxygen Society, USA (1999)
- The Rotary-Yoneyama Scholarship, Japan (1998)
- The Agricultural Chemistry Scholarship, The University of Tokyo, Japan (1998)

- The Mi-Won Culture Foundation Scholarship, Korea (1985)
- The Honor Student Scholarship, Seoul National University, Korea (1982)

6. Research Interests: probiotics, lactic acid bacteria, gut microbiome, etc

7. Members of Academic Societies

- Korean Society of Animal Science and Technology
- Korean Society for Food Science of Animal Resources
- Korean Society of Dairy Science and Technology
- Korean Society of Food Science and Technology
- Korean Society for Lactic Acid Bacteria and Probiotics
- The Korean Society for Microbiology and Biotechnology
- The Microbiological Society of Korea
- Korean Society of Microbiome

8. Publications (2016~2021)

- “Trace metals and animal health: interplay of the gut microbiota with iron, manganese, zinc, and copper”. *Animal Nutrition*. **2021**. (IF 6.38, Corresponding author)
- “*Cudrania tricuspidata* combined with *Lactobacillus rhamnosus* modulates gut microbiota and alleviate obesity-associated metabolic parameters in obese mice”. *Microorganisms*. **2021**. (IF 4.13, Corresponding author)
- “Multispecies probiotics alter fecal short-chain fatty acids and lactate levels in weaned pigs by modulating gut microbiota”. *Journal of Animal Science and Technology*. **2021**. (IF 2.23, Corresponding author)
- “Exploring the bile stress response of *Lactobacillus mucosae* LM1 through exoproteome analysis”. *Molecules*. **2021**. (IF 4.412, Corresponding author)
- “Bacteriophage cocktail supplementation improves growth performance, gut microbiome and production traits in broiler chickens”. *Journal of Animal Science and Biotechnology*. **2021**. (IF 5.03)
- “Anti-obesity effects of *Lactobacillus rhamnosus* 4B15, and its synergy with hydrolyzed lactose skim milk powder”. *International Dairy Journal*. **2021**. (IF 3.03)
- “Exoproteome perspective on the bile stress response of *Lactobacillus johnsonii*”. *Proteomes*. **2021**. (Corresponding author)

- "NADP+-dependent dehydrogenase SCO3486 and cycloisomerase SCO3480: Key enzymes for 3,6-anhydro-L-galactose catabolism in *Streptomyces coelicolor* A3(2)". *Journal of Microbiology and Biotechnology*. **2021**. (IF 2.35)
- "The effects of multispecies probiotic formulations on growth performance, hepatic metabolism, intestinal integrity and fecal microbiota in growing-finishing pigs". *Animal Feed Science and Technology*. **2021**. (IF 3.25)
- "Association between the body weight of growing pigs and the functional capacity of their gut microbiota". *Animal Science Journal*. **2020**. (IF 1.75, Corresponding author)
- "Synergistic effect of *Lactobacillus gasseri* and *Cudrania tricuspidata* on the modulation of body weight and gut microbiota structure in diet-induced obese mice". *Applied Microbiology and Biotechnology*. **2020**. (IF 4.81, Corresponding author)
- "Complete genome sequence of *Lactobacillus plantarum* SK156, a candidate vehicle for mucosal vaccine delivery". *Journal of Animal Science and Technology*. **2020**. (IF 2.26, Corresponding author)
- "Molecular characterization of a novel 1,3- α -3,6-anhydro-L-galactosidase, Ahg943, with cold- and high-salt-tolerance from *Gayadomonas joobiniege* G7". *Journal of Microbiology and Biotechnology*. **2020**. (IF 2.35)
- "Complete genome sequence of the acidic cellulase producer *Bacillus amyloliquefaciens* ATC6". *Journal of Animal Science and Technology*. **2020**. (IF 2.26, Corresponding author)
- "Characterisation of a Lysophospholipase from *Lactobacillus mucosae*". *Biotechnology Letters*. **2020**. (IF 2.46, Corresponding author)
- "Antimicrobial substance of *Lactobacillus johnsonii* PF01". *Journal of Dairy Science and Biotechnology*. **2020**. (Corresponding author)
- "Construction of a bile-responsive expression system in *Lactobacillus plantarum*". *Food Science of Animal Resources*. **2019**. (IF 2.47, Corresponding author)
- "Protective effect of cryoprotectants on the stability of freeze-dried *Lactobacillus fermentum* SK152". *Journal of Dairy Science and Biotechnology*. **2019**. (Corresponding author)
- "Molecular cloning and characterization of a novel cold-adapted alkaline 1,3-a-3,6-anhydro-L-galactosidase, Ahg558, from *Gayadomonas joobiniege* G7". *Applied Biochemistry and Biotechnology*. **2019**. (IF: 2.93)

- “Comparative genomic analysis of *Lactobacillus mucosae* LM1 identifies potential niche-specific genes and pathways for gastrointestinal adaptation”. *Genomics*. **2019**. (IF: 5.74, Corresponding author)

- "Isolation and characterization of an anti-listerial bacteriocin from *Leuconostoc lactis* SD501". *Korean Journal for Food Science of Animal Resources*. **2018**. (IF: 2.62, Corresponding author)

- “Complete genome sequence of *Lactobacillus plantarum* SK151 isolated from kimchi”. *Korean Journal of Microbiology*. **2018**. (Corresponding author)

- “Identification and biochemical characterization of a novel cold-adapted 1,3- α -3,6-anhydro-L-galactosidase, Ahg786, from *Gayadomonas joobiniege* G7”. *Applied Microbiology and Biotechnology*. **2018**.(IF: 4.81)

- “Comparative exoproteome analyses of *Lactobacillus* spp. reveals species- and strain-specific proteins involved in their extracellular interaction and probiotic potential”. *LWT-Food Science and Technology*. **2018**. (IF: 4.95, Corresponding author)

- “Horizontal gene transfer of *Chlamydia*: Novel insights from tree reconciliation”. *PLoS One*. **2018**.(IF: 3.24)

- “Comparative genomic analysis of *Lactobacillus plantarum* GB-LP4 and identification of evolutionarily divergent genes in high-osmolarity environment”. *Genes & Genomics*. **2018**. (IF: 1.84)

- “Protective effects of *Bacillus subtilis* against *Salmonella* infection in the microbiome of Hy-Line Brown layers”. *Asian-Australasian Journal of Animal Sciences*. **2017**. (IF: 2.51, Corresponding author)

- “Effects of *Bacillus subtilis* CSL2 on the composition and functional diversity of the faecal microbiota of broiler chickens challenged with *Salmonella Gallinarum*”. *Journal of Animal Science and Biotechnology*. **2017**. (IF: 5.03, Corresponding author)

- “Proteomic view of the crosstalk between *Lactobacillus mucosae* and intestinal epithelial cells in co-culture revealed by Q Exactive-based quantitative proteomics”. *Frontiers in Microbiology*. **2017**. (IF: 5.64, Corresponding author)

- “Complete genome analysis of *Lactobacillus fermentum* SK152 from kimchi reveals genes associated with its antimicrobial activity”. *FEMS Microbiology Letters*. **2017**. (IF: 2.74, Corresponding author)

- “Potential probiotic *Lactobacillus plantarum* Ln4 from kimchi: Evaluation of b-galactosidase and antioxidant activities”. *LWT - Food Science and Technology*. **2017** (IF: 4.95).

- “Comparative genome analysis of *Lactobacillus plantarum* GB-LP3 provides candidates of survival-related genetic factors”. *Infection, Genetics and Evolution*. **2017**. (IF: 3.34)
- “Identification and characterization of a novel antioxidant peptide from bovine skim milk fermented by *Lactococcus lactis* SL6”. *Korean Journal for Food Science of Animal Resources*. **2017**. (IF: 2.62, Corresponding author)
- “Comparative genomic analysis of *Lactobacillus plantarum* GB-LP1 isolated from traditional Korean fermented food”. *Journal of Microbiology and Biotechnology*. **2017**. (IF: 2.35)
- “Effect of Dietary Bacillus Subtilis C14 and RX7 Strains on Growth Performance, Blood Parameter, and Intestinal Microbiota in Broiler Chickens Challenged with Salmonella Gallinarum”. *Journal of Poultry Science*. **2017**. (IF: 1.43)
- “Probiotic roles of *Lactobacillus* sp. in swine: insights from gut microbiota”. *Journal of Applied Microbiology*. **2017**. (IF 3.77, Corresponding author)
- “Revealing the combined effects of lactulose and probiotic enterococci on the swine faecal microbiota using 454 pyrosequencing”. *Microbial Biotechnology*. **2016**. (IF 5.81, Corresponding author)
- “Expression and characterisation of neopullulanase from *Lactobacillus mucosae* LM1”. *Biotechnology Letters*. **2016**. (IF 2.46, Corresponding author)
- “Production of aminolevulinic acid by recombinant *Escherichia coli* co-expressing *hema* and *otsBA* using crude glycerol as carbon source”. *Microbiology and Biotechnology Letters*. **2016**.
- “Carbohydrate-binding specificities of potential probiotic *Lactobacillus* strains in porcine jejunal (IPEC-J2) cells and porcine mucin”. *Journal of Microbiology*. **2016**. (IF 3.42, Corresponding author)
- “Isolation and characterization of a broad spectrum bacteriocin from *Bacillus amyloliquefaciens* RX7”. *BioMed Research International*. **2016**. (IF 3.41, Corresponding author)
- “An egg yolk immunoglobulin (RVP6-IgY) specific for a constructed rotavirus VP6 antigen (rVP6) inhibited rotavirus replication *in vitro*”. *Philippine Journal of Science*. **2016**. (Corresponding author)
- “Constructing proteome reference map of the porcine jejunal cell line (IPEC-J2) by label-free mass spectrometry”. *Journal of Microbiology and Biotechnology*. **2016**. (IF 2.35, Corresponding author)

- “Comparative analysis of the complete genome of *Lactobacillus plantarum* GB-LP2 and the genetic evidence of host immune system enhancement”. *Journal of Microbiology and Biotechnology*. **2016**. (IF 2.35)

9. Presentations on International Conferences (Since 2013, selected)

- “Characterization of probiotic properties in *Lactobacillus mucosae* by omics-based approaches”, The 3rd International Conference on Beneficial Microbes (ICOBM-2018), July 30-Aug 1, 2018, Kuching, Malaysia. (Invited).
- “A novel antioxidant peptide from fermented milk”, 12th International Symposium on Lactic Acid Bacteria (LAB12), August 27-31, 2017, Egmond aan Zee, the Netherlands.
- “Cell surface display of porcine epidemic diarrhea virus antigen in *Lactobacillus* sp.”, The 9th Asian Conference on Lactic Acid Bacteria (ACLAB-9). July 3-5, 2017, Gwangju, South Korea. (Invited).
- “Changes in the faecal microbial community by feeding *Enterococcus* sp. and lactulose in weaned pigs”. 2017 International Scientific Conference on Probiotics and Prebiotics (IPC-2017). June 20-22, 2017, Budapest, Hungary.
- “Expression and characterization of neopullulanase from *Lactobacillus mucosae*”, The 5th Asian Federation’s Symposium on Lactic Acid Bacteria (AFSLAB-5), Nov 28-30, 2016, Taipei, Taiwan (Invited).
- “Understanding the pig gut microbial ecology as a model of the human gastrointestinal tract”, 7th Asia-Pacific Biotechnology Congress, July 13-17, 2016, Vigan, Philippines. (Invited).
- “Changes in the diversity and composition of fecal microbiota by the administration of probiotics in pigs”, The 2nd International Conference on Beneficial Microbes (ICOBM-2016), May 31-June 2, 2016, Phuket, Thailand. (Invited).
- “Gut microbiota modulation by probiotics and prebiotics”, Probiotics Congress: Asia, Feb 29-Mar 1, 2016, Kuala Lumpur, Malaysia. (Invited).
- “Gaining insight on the probiotic adhesion ability of *Lactobacillus mucosae*”, The 8th Asian Conference on Lactic Acid Bacteria (ACLAB-8), July 8-10, 2015, Bangkok, Thailand.
- “Screening of promoters for the construction of expression vector in *Lactobacillus* sp.”, 2015 International Scientific Conference on Probiotics and Prebiotics (IPC-2015). June 23-25, 2015, Budapest, Hungary.
- “*In vitro* and *in silico* analysis of probiotic adhesion and inhibition abilities of putative probiotic strains isolated from pig faeces”, 12th International Symposium on Lactic Acid Bacteria (LAB11), August 27-31, 2014, Egmond aan Zee, the Netherlands.
- “Microbial community analysis in the faecal samples of post-weaning piglets using 16S rRNA pyrosequencing”, The 5th Congress of European Microbiologists (FEMS 2013),

July 21-25, 2013, Leipzig, Germany.

10. Patents (Korea)

- Multi-functional probiotics for marine fish and uses thereof) (Application No: 1020200142570)
- Bacillus megaterium S188 strain having enzyme secretion activity and hydrogen sulfide odor removal activity and uses thereof) (Registration No: 1021965850000)
- Promoter having increased expression under acidic condition from Lactobacillus johnsonii and uses thereof) (Registration No: 1018120160000)
- Shuttle vector comprising a promoter inducibly expressed under bile acid and composition comprising the same (Registration No: 10-1613897)
- Bacillus subtilis RX7 strain having antimicrobial activity against harmful microorganism and uses thereof) (Registration No: 10-1594446)
- Lactobacillus mucosae LM1 with excellent acid-Resistant, bile-resistance, antibacterial activity and adhere to mucosal surfaces, and composition containing the same) (Registration No: 10-1487446)
- Synbiotic feed additive affecting gut microbiota and growth performance of livestock) (Registration No: 1015918790000)
- Bacillus licheniformis producing cellulase and xylanase and uses thereof) (Registration No: 10-1062309)
- The extract of Green Tea having inhibition activity for urease of Helicobacter pylori and the health functional food using thereof) (Registration No: 10-0673605)
- Lactobacilli separated from excrement of young pig and animal milk product and feed containing lactobacilli (Registration No: 10-0495864)
- Feed additives decreasing cholesterol and thereof egg or pork produced by the said feed additives (Registration No: 10-0490698)
- Lactoferricin gene and transformant expressing lactoferricin (Registration No: 10-0454595 (Korea) and US7186795B2 (USA)
- Process for the preparation of barley containing calcium (Registration No: 10-0400631)