



• Field Medical nutrition
• Name Park, kyeongho
• Title Assistant Professor

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Educational background

2003: B.A Kyunghee University
2005: M.S Graduate School of East-West Medical Science, Kyunghee University
2009: Ph.D. Graduate School of East-West Medical Science, Kyunghee University

Major careers

2017 ~ present: Adjunct Assistant Research Scientist, NCIRE-VA Medical Center, USA
2014 ~ 2017: Assistant Research Dermatologist (Principal Investigator: Faculty in Dermatology), NCIRE-VA Medical Center, UCSF
2010 ~ 2014: Staff Research Associate, Northern California Institute for Research and Education (NCIRE)-VA Medical Center, UCSF
2009 ~ 2010: Postdoctoral Fellow, University of California, San Francisco (UCSF)
2016 ~ present: Review Editor, Journal of Medicinal Food
2015 ~ present: Scientific Advisory Board, INCOSPHARM
2015 ~ 2016: Lead Guest Editor, BioMed Research International

Studies & Books

Theses

- Ceramide and its metabolites, including sphingosine-1-phosphate (S1P), are involved in the biological modulation of keratinocytes and immune cells of the skin. We recently elucidated that S1P is a key-signaling molecule to stimulate an innate immune element, cathelicidin antimicrobial peptide (CAMP) production (J Biol Chem, 2011, Mol Cell Biol, 2013 and 2014, J Invest Dermatol, 2013, and PNAS 2016). My research focuses on the identification of molecular mediators that regulate sphingolipid metabolism, and on the elucidation of molecular mechanisms by which nutrients or dietary bioactive compounds, such as resveratrol (J Invest Dermatol, 2013), isoflavones (J Nutri Biochem, 2014), silk proteins (J Korean Soc Food Sci Nutr, 2007), play regulatory roles in the integration of sphingolipid metabolism. Recently, I have expanded my research to skin inflammation using various experimental models to identify molecular mechanisms that are critically involved in the cutaneous inflammatory diseases, e.g., psoriasis, rosacea, and atopic dermatitis, and skin cancers, including squamous cell carcinoma.

- Park K, Ikushiro H, Seo HS, Shin KO, Kim YI, Kim JY, Lee YM, Yano T, Holleran WM, Elias PM, Uchida Y. "ER stress stimulates production of the key antimicrobial peptide, cathelicidin, by forming a previously unidentified intracellular S1P signaling complex." Proceedings of the National Academy of Sciences of the United States of America (PNAS) 113:E1334-42, 2016

Note: 1) This article was featured in Cell Chemical Biology, 23(3): 313-314, 2016 2) This paper was highlighted in the Biological Research Information Center (BRIC) in Korea, 02/24/2016.

- Jeong SK, Kim YI, Shin KO, Kim BW, Lee SH, Jeon JE, Kim HJ, Lee YM, Mauro TM, Elias PM, Uchida Y, Park K*. "Sphingosine kinase 1 activation enhances epidermal innate immunity through sphingosine-1-phosphate stimulation of cathelicidin production." Journal of Dermatological Science 79:229-34, 2015

Note: This article was selected as the editor's choice for this issue

- Kim KP*, Shin KO*, Park K*, Yun HJ, Mann S, Lee YM, Cho Y. Vitamin C Stimulates Epidermal Ceramide Production by Regulating Its Metabolic Enzymes. Biomolecules & Therapeutics 23:525-30, 2015 *Co-first authors

- Park K. "Role of micronutrients in skin health and function." Biomolecules & Therapeutics 23:207-17, 2015

- Kim YI*, Park K*, Kim JY, Seo HS, Shin KO, Lee YM, Holleran WM, Elias PM, Uchida Y. "An ER Stress-Initiated Sphingolipid Metabolite, Ceramide-1-Phosphate, Regulates Epithelial Innate Immunity By Stimulating β -Defensin Production". Molecular and Cellular Biology 34:4368-78, 2014 *Co-first authors

- Choi JH, Seo HS, Lim SY, Park K*. "Cutaneous immune defenses against Staphylococcus aureus infections." Journal of Lifestyle Medicine 4:39-46, 2014.

- Park K, Kim YI, Seo HS, Kim JY, Oda Y, Mann T, Holleran WM, Elias PM, Uchida Y. "Dietary genistein stimulates cathelicidin antimicrobial peptide expression through a novel S1P-dependent mechanism." Journal of Nutritional Biochemistry 25: 734-40, 2014

- Park K*, Ju WC, Seo HS, Uchida Y, and Cho Y*. "Increased OPG/RANKL ratio in the conditioned medium of soybean-treated osteoblasts suppresses RANKL-induced osteoclast differentiation." International Journal of Molecular Medicine 33:178-84, 2014 *Co-corresponding authors

- Park K, Elias PM, Hupe M, Borkowski AW, Gallo RL, Shin KO, Lee YM, Holleran WM, Uchida Y. "Resveratrol Stimulates Sphingosine-1-Phosphate Signaling of Cathelicidin Production." Journal of Investigative Dermatology 133:1042-9, 2013

- Park K, Elias PM, Shin KO, Lee YM, Hupe M, Borkowski AW, Gallo RL, Saba J, Holleran WM, Uchida Y. "A novel role of a lipid species, sphingosine-1-phosphate, in epithelial innate immunity." Molecular and Cellular Biology 33:752-62, 2013

- Park K, Lee S, Lee YM. "Sphingolipids and Antimicrobial Peptides: Function and Roles in Atopic Dermatitis." Biomolecules & Therapeutics 21: 251-7, 2013

- Park K, Elias PM, Oda Y, Mackenzie D, Mauro T, Holleran WM, Uchida Y. "Regulation of cathelicidin expression by an ER stress signaling, vitamin D receptor-independent pathway." *Journal of Biological Chemistry* 286: 34121-30, 2011
- Choi JH, Jang AY, Lin S, Lim S, Kim D, Park K, Han SM, Yeo JH, Seo HS. Melittin, a honeybee venom-derived antimicrobial peptide, may target methicillin-resistant *Staphylococcus aureus*. *Molecular Medicine Reports* 12(5):6483-90, 2015
- Uchida Y, Kim YI, Park K. Signaling roles of ceramide and its metabolites in cutaneous antimicrobial defense. *Dermatologica sinica* 33: 78-83, 2015
- Sun R, Celli A, Crumrine D, Hupe M, Adame LC, Pennypacker SD, Park K, Uchida Y, Feingold KR, Elias PM, Ilic D, Mauro TM. "Lowered Humidity Produces Human Epidermal Equivalents with Enhanced Barrier Properties." *Tissue Engineering Part C Methods* 21:15-22, 2015
- Borkowski AW, Park K, Uchida Y, Gallo RL. "Activation of TLR3 in Keratinocytes Increases Expression of Genes Involved in Formation of the Epidermis, Lipid Accumulation and Epidermal Organelles." *Journal of Investigative Dermatology* 133: 2031-40, 2013
- Youm JK, Park K, Uchida Y, Chan A, Mauro TM, Holleran WM, Elias PM. "Local blockade of glucocorticoid activation reverses stress- and glucocorticoid-induced delays in cutaneous wound healing." *Wound Repair and Regeneration* 21: 715-22, 2013
- Lin TK, Man MQ, Santiago JL, Roelandt T, Oda Y, Hupe M, Crumrine D, Lee HJ, Gschwandtner M, Thyssen JP, Trullas C, Tschachler E, Feingold KR, Elias PM. "Topical antihistamines display potent anti-inflammatory activity linked in part to enhanced permeability barrier function." *Journal of Investigative Dermatology* 133:469-78, 2013
- Hou M, Sun R, Hupe M, Kim PL, Park K, Crumrine D, Lin T, Santiago JL, Mauro TM, Elias PM, Man MQ. "Topical Apigenin Improves Epidermal Permeability Barrier Homeostasis in Normal Murine Skin by Divergent Mechanisms." *Experimental Dermatology* 22:201-5, 2013
- Chon JW, Kim H, Jeon HN, Park K, Lee KG, Yeo JH, Kweon HY, Lee HS, Jo YY, Park YK. "Hydrolysate silk fibroin inhibits osteoclastogenesis and induces apoptosis of osteoclasts in RAW 264.7 cells." *International Journal of Molecular Medicine* 30:1203-10, 2012
- Hou M, Man M, Man W, Zhu W, Hupe M, Park K, Crumrine D, Elias PM, Man MQ. "Topical hesperidin improves epidermal permeability barrier function and epidermal differentiation in normal murine skin." *Experimental Dermatology* 21:337-40, 2012
- Lee, Park S, Park K, Choue R. "Hepatoprotective Activity of *Scutellariae Radix* Extract in Mice Fed a High Fat Diet with Chronic Alcohol Exposure." *Phytotherapy Research* 25:1348-53, 2011
- Uchida Y, Houben E, Park K, Douangpanya S, Lee YM, Wu BX, Hannun YA, Radin NS, Elias PM, Holleran WM. "Hydrolytic pathway protects against ceramide-induced apoptosis in keratinocytes exposed to UVB." *Journal of Investigative Dermatology* 130:2472-80, 2010
- Uchida Y, Cho Y, Moradian S, Kim J, Nakajima K, Crumrine D, Park K, Ujihara M, Akiyama M, Shimizu H, Holleran WM, Sano S, Elias PM. "Neutral lipid storage leads to acylceramide deficiency, likely contributing to the pathogenesis of Dorfman-Chanarin syndrome." *Journal of Investigative Dermatology* 130:2497-9, 2010
- Kim H, Oh I, Park KH, Kim NM, Do JH, Cho Y. "Stimulatory Effect of Dietary Red Ginseng on Epidermal Hydration and Ceramide Levels in Ultraviolet-Irradiated Hairless Mice." *Journal of Medicinal Food* 12:746-54, 2009
- Lee KG, Cho HJ, Bae YS, Park KK, Choe JY, Chung IK, Kim M, Yeo JH, Park KH, Lee YS, Kim CH, Chang YC. "Bee venom suppresses LPS-mediated NO/iNOS induction through inhibition of PKC- α expression." *Journal of Ethnopharmacology* 123:12-21, 2009
- SCOPUS Journal/Domestic Journal (South Korea)
- Uchida Y, Park K. "Anti-microbial Peptides in Skin Barrier Functions." *Journal of Skin Barrier Research* 15: 16-23, 2013
- Park KH, WC Ju, JH Yeo, KG Lee, Y Cho. "Conditioned Medium of Soybean Extract Treated Osteoblasts Inhibits RANKL Induced Differentiation of Osteoclasts." *Journal of the Korean Society of Food Science and Nutrition* 39:64-70, 2010
- Yeo JH*, Park KH*, Ju WC, Lee J, Lee KG, Woo SO, Han SM, Kweon HY, Kim SS, Cho Y. "Inhibitory effect of conditioned medium of silk fibroin-treated osteoblasts in osteoclast differentiation." *Journal of the Korean Society of Food Science and Nutrition* 37: 992-7, 2008

*Co-first authors.

- Yeo JH*, Park K*, Woo SO, Kweon HY, Han SM, Lee HS, Lee J, Lee IS, Cho Y. "Molecular weight and structure changes of enzymatic hydrolysate from *bombyx mori* fibroin." *Korean Journal of Food Science and Technology* 40:470-3, 2008

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- Park KH, Choi YS, Kim HA, Lee KG, Yeo JH, Jung DH, Kim SH, Cho Y. "Dietary effect of silk protein on ceramide synthesis and the expression of ceramide metabolic enzymes in the epidermis of NC/Nga mice." *Journal of the Korean Society of Food Science and Nutrition* 26: 554-62, 2007

- Yeo JH, Lee KG, Woo SO, Kweon HY, Han SM, Park KH, Kim SS. "Dietary effect of silk protein on colon cancer of animal." *Journal of Sericultural and Entomological Science (formerly titled Korean journal of sericultural science)* 49:67-70, 2007

- Kim HA, Park KH, Yeo JH, Lee KG, Jung DH, Kim SH, Cho Y. "Dietary effect of silk protein sericin or fibroin on plasma and epidermal amino acid concentration of NC/Nga mice." *Journal of Nutrition and Health (formerly titled Korean Journal of Nutrition)* 39: 520-8, 2006

- Yeo JH, Lee KG, Kweon HY, Han SM, Park KH, Kim SS, Shin BS. "Application for dietary resources by silk protein." *Journal of Sericultural and Entomological Science (formerly titled Korean journal of sericultural science)* 48: 6-10, 2006

■ Books

- Uchida Y and Park K. Chapter 2: "Stratum Corneum" in "Immunology of the Skin: Basic and Clinical Sciences in Skin Immune Responses". Springer Japan, 2016 (ISBN: 978-4-431-55853-8)

- Park K. Chapter: "Micronutrients in Skin and Allied Diseases" in "Emerging Roles of Nutraceutical and Functional Foods in immune support: Immunity in Health and Disease". In press. Elsevier in 2017

I Others

■ Awards

- 2014 미국피부과학회/일본피부과학회 신진과학자상

- 2014 미국피부과학회 Research Fellow Award

- 2011 제6회 국제 세라마이드학회 Speaker Award