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Educational Background

- 2007-2013 Icahn School of Medicine at Mount Sinai (Ph.D.-Microbiology)
- 1997-2005 Sungkyunkwan University (BS-Genetic Engineering)

Major Careers

- 2018-Present Assistant Professor, Department of Microbiology, College of Medicine, Hallym University
- 2013-2018 Research Instructor, Department of Microbiology, College of Medicine, Korea University
- 2013-2013 Postdoctoral Fellow, Department of Pathobiology, Veterinary School of Medicine, University of Pennsylvania
- 2010-2013 Visiting Scholar, Department of Pathobiology, Veterinary School of Medicine, University of Pennsylvania
- 2007 Research Assistant, Division of Hematology, School of Medicine, University of Utah
- 2006-2007 Research Assistant, Vaccine Research Institute of San Diego

Research and Book

- 1) Seung-Ho Lee, Kijin Kim, Jong Woo Kim, Jin Sun No, Kyungmin Park, Shailesh Budhathoki, Seung Ho Lee, Jingyeong Lee, Seung Hye Cho, Geum-Young Lee, Jusun Hwang, Heung-Chul Kim, Terry A. Klein, Chang-Sub Uhm, **Won-Keun Kim***, Jin-Won Song*, Discovery and Genetic Characterization of Novel Paramyxoviruses Belonging to The Genus Henipavirus in Crocidura species in The Republic of Korea, *Viruses*, 13(10), 2020; <https://doi.org/10.3390/v13102020> (2021) ***Co-correspondence**
- 2) Seungchan Cho*, **Won-Keun Kim***, Jin Sun No*, Jaehun Jung, Yongjin Yi, Hyane Cho Park, Seung-Ho Lee, Geum-Young Lee, Kyungmin Park, Jeong-Ah Kim, Jongwoo Kim, Jingyeong Lee, Daesang Lee, Dong Hyun Song, Se Hun Gu, Seong Tae Jeong, Jin-Won Song, Urinary Genome Detection and Tracking of Hantaan Virus from Hemorrhagic Fever with Renal Syndrome Patients Using Multiplex PCR-based Next-generation Sequencing, *PLoS Neglected Tropical Diseases*, 15(9):e0009707 (2021) ***Equal contribution**
- 3) Seung-Ho Lee, Jin Sun No, Kijin Kim, Shailesh Budhathoki, Kyungmin Park, Geum Young Lee, Seungchan Cho, Hyeok Sun Choi, Bong-Hyun Kim, Seunghee Cho, Jong Woo Kim, Jin Gyeong Lee, Seung Hye Cho, Heung-Chul Kim, Terry A. Klein, Chang-Sub Uhm, **Won-Keun Kim***, Jin-Won Song*, Novel Paju Apodemus Paramyxovirus 1 and 2, Harbored by *Apodemus agrarius* in The Republic of Korea, *Virology*, 562: 40-49 (2021) ***Co-correspondence**
- 4) Kyungmin Park*, **Won-Keun Kim***, Seung-Ho Lee, Jongwoo Kim, Jingyeong Lee, Seungchan Cho, Geum-Young Lee, Jin Sun No, Keun Hwa Lee, and Jin-Won Song, A novel genotype of Hantaan Orthohantavirus harbored by *Apodemus agrarius chejuensis* as a potential etiologic agent of Hemorrhagic Fever with Renal Syndrome in Republic of Korea, *PLoS Neglected Tropical Diseases*, 15(5):e0009400 (2021) ***Equal contribution**
- 5) Kyungmin Park, Seung-Ho Lee, Jongwoo Kim, Jingyeong Lee, Geum-Young Lee, Seungchan Cho, Seung Ho Lee, Kkothanahreum Park, Jin Sun No, Shailesh Budhathoki, Yu-Jin Kim, Young-Su Kim, Heung-Chul Kim, Terry A. Klein, **Won-Keun Kim**, and Jin-Won Song, Multiplex PCR-based Nanopore Sequencing and Epidemiological Surveillance of Hantaan orthohantavirus in *Apodemus agrarius*, Republic of Korea, *Viruses*, 13(5), 847 (2021)
- 6) Gunsup Lee, Shailesh Budhathoki, Geum-Young Lee, Kwang-ji Oh, Yeon Kyoung Ham, Young Jun Kim, Ye Rin Lim, Phuong Thi Hoang, Yongjun Lee, Seok-Won Lim, Jun-Mo Kim, Seungchan Cho, Tai-Hyun Kim, Jin-Won Song, Sukchan Lee* and **Won-Keun Kim***, Broad-spectrum antiviral activity of 3D8, a nucleic acid-hydrolyzing single chain variable fragment (scFv), targeting SARS-CoV-2 and multiple coronaviruses *in vitro*, *Viruses*, 13(4), 650 (2021) ***Co-correspondence**
- 7) Seungchan Cho, Jon C. Allison, Kkothanahreum Park, Jin Sun No, Seung-Ho Lee, Kyungmin Park, Jongwoo Kim, Terry A. Klein, Heung-Chul Kim, **Won-Keun Kim**, Jin-Won Song, A Clinical Case of Scrub typhus in

The United States Forces Korea Patient with Eschar and Genetic Identification of *Orientia tsutsugamushi* using Multiplex PCR-based Next-generation Sequencing, *Pathogens*, 10(4), 424, <https://doi.org/10.3390/pathogens10040424> (2021)

- 8) Byoung Kwon Park, Jinsoo Kim, Sangkyu Park, Dongbum Kim, Minyoung Kim, Kyeongbin Baek, Joon-Yong Bae, Man-Seong Park, **Won-Keun Kim**, Younghee Lee, Hyung-Joo Kwon, MERS-CoV and SARS-CoV-2 replication can be inhibited by targeting the interaction between the viral spike protein and the nucleocapsid protein, *Theranostics*, 11(8):3853-3867 (2021)
- 9) **Won-Keun Kim**, Seungchan Cho, Seung-Ho Lee, Jin Sun No, Geum-Young Lee, Kyungmin Park, Daesang Lee, Seong Tae Jeong and Jin-Won Song, Genomic Epidemiology and Active Surveillance to Investigate Outbreaks of Hantaviruses, *Frontiers in Cellular and Infection Microbiology*, doi: 10.3389/fcimb.2020.532388, (2021) **Review**
- 10) Geum-Young Lee*, **Won-Keun Kim***, Kyungmin Park*, Seung-Ho Lee, Jusun Hwang, Jin Sun No, Seungchan Cho, Daesang Lee, Dong-Hyun Song, Se Hun Gu, Man-Seong Park, Seung Tae Jung, Young-Su Kim, and Jin-Won Song, Phylogeographic Diversity and Hybrid Zone of Hantaan orthohantavirus Collected in Gangwon Province, Republic of Korea, *PLoS Neglected Tropical Diseases*, 14(10): e0008714 (2020) ***Equal contribution**
- 11) **Won-Keun Kim**, Coronavirus disease (COVID)-19 사태에 대한 현황과 고찰, 방재 저널 (*Journal of Disaster Prevention*, ISSN 1976-4294, 22 (2), 20-31 (2020)
http://www.kodipa.or.kr/HyAdmin/view.php?&bbs_id=bo01&page=&doc_num=131
- 12) Seung-Ho Lee*, Jin Sun No*, **Won-Keun Kim***, Ewa Gajda, Agnieszka Percec-Matysiak, Jeong-Ah Kim, Joanna Hildebrand, Richard Yanagihara, and Jin-Won Song, Molecular epidemiology and genetic diversity of orthohantaviruses in small mammals in western Poland, *American Journal of Tropical Medicine and Hygiene*, 103(1): 193-199 (2020) ***Equal contribution**
- 13) Seung-Ho Lee*, **Won-Keun Kim***, Kyungmin Park, Jin Sun No, Geum Young Lee, Heung-Chul Kim, Terry A. Klein, Mi-Sook Min, Seo-Jin Lee, Jusun Hwang, Man-Seong Park, and Jin-Won Song, Genetic Diversity and Phylogeography of Jeju Orthohantavirus (Hantaviridae) in the Republic of Korea, *Virology*, 543:13-19 (2020) ***Equal contribution**
- 14) **Won-Keun Kim**, Jin Sun No, Daesang Lee, Jaehun Jung, Hayne Park, Yongjin Yi, Jeong-Ah Kim, Seung-Ho Lee, Yujin Kim, Sunhye Park, Seungchan Cho, Geum-Young Lee, Dong Hyun Song, Se Hun Gu, Kkothanahreum Park, Heung-Chul Kim, Michael R. Wiley, Patrick S. G. Chain, Seong Tae Jeong, Terry A. Klein, Gustavo Palacios, and Jin-Won Song, Active Targeted Surveillance to Identify Sites of Emergence of Hantavirus, *Clinical Infectious Diseases*, Mar. 20th, 70(3) 464-473 (2020)

- 15) Jin Sun No*, **Won-Keun Kim***, Seungchan Cho*, Seung-Ho Lee, Jeong-Ah Kim, Daesang Lee, Dong Hyun Song, Se Hun Gu, Seong Tae Jeong, Michael R. Wiley, Gustavo Palacios, and Jin-Won Song, "Comparison of targeted next-generation sequencing for whole-genome sequencing of Hantaan orthohantavirus in *Apodemus agrarius* lung tissues, *Scientific Reports*, 9: 16631 (2019) ***Equal contribution**
- 16) Heung-Chul Kim*, **Won-Keun Kim***, Jin Sun No, Seung-Ho Lee, Se Hun Gu, Sung-Tae Chong, Terry A. Klein, and Jin-Won Song, Urban Rodent Surveillance, Climatic Association and Genomic Analysis of Seoul Virus Collected at U.S. Army Garrison, Seoul, Republic of Korea, 2006-2010, *American Journal of Tropical Medicine and Hygiene*, 99(2): 470-476 (2018) ***Equal contribution**
- 17) **Won-Keun Kim***, Jin Sun No*, Seung-Ho Lee, Dong Hyun Song, Daesang Lee, Jeong-Ah Kim, Se Hun Gu, Sunhye Park, Seong Tae Jeong, Heung-Chul Kim, Terry A. Klein, Michael R. Wiley, Gustavo Palacios, Jin-Won Song, Multiplex PCR-based next-generation sequencing and global diversity of Seoul virus in humans and rats, *Emerging Infectious Diseases*, 24(2): 249-257 (2018) ***Equal contribution**
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- 18) Heung-Chul Kim*, **Won-Keun Kim***, Terry A. Klein, Sung-Tae Chong, Peter V. Nunn, Jeong-Ah Kim, Seung-Ho Lee, Jin Sun No and Jin-Won Song, Hantavirus Surveillance and Genetic Diversity Targeting Small Mammals at Camp Humphreys, a US Military Installation and new expansion site, Republic of Korea, *PLoS One*, 12(4): e0176514 (2017) ***Equal contribution**
- 19) Seung-Ho Lee*, **Won-Keun Kim***, Jin Sun No, Jeong-Ah Kim, Jin Il Kim, Se Hun Gu, Heung-Chul Kim, Terry A. Klein, Manseong Park and Jin-Won Song Dynamic Circulation and Genetic Exchange of a Shrew-borne Hantavirus, Imjin virus, in the Republic of Korea, *Scientific Reports*, 7: srep44369 (2017) ***Equal contribution [KU BK21 Best research award, Korea University Brain Korea 21]**
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- 20) Dong Hyun Song*, **Won-Keun Kim***, Se Hun Gu, Daesang Lee, Jeong-Ah Kim, Jin Sun No, Seung-Ho Lee, Michael R. Wiley, Gustavo Palacios, Jin-Won Song, Seong Tae Jeong Sequence-Independent, Single-Primer Amplification Next-Generation Sequencing of Hantaan virus cell culture-based isolates, *American Journal of Tropical Medicine and Hygiene*, 96: 389-394 (2017) ***Equal contribution**
- 21) Jeong-Ah Kim, **Won-keun Kim**, Jin Sun No, Seung-Ho Lee, Sook-YoungLee, Ji Hye Kim, Jeong Hoon Kho, Daesang Lee, Dong Hyun Song, Se Hun Gu, Seong Tae Jeong, Man-Seong Park, Heung Chul Kim, Terry A. Klein, and Jin-Won Song, Genetic Diversity and Reassortment of Hantaan Virus Tripartite RNA Genomes in Nature, the Republic of Korea, *PLoS Neglected Tropical diseases*, 10(6): e0004650 (2016)

- 22) Sook-Young Lee, Jeong-Hoon Kim, Tae-Kun Seo, Jin Sun No, Hankyeom Kim, **Won-keun Kim**, Han-Gu Choi, Sung-Ho Kang, Jin-Won Song, Genetic and Molecular Epidemiological Characterization of a Novel Adenovirus in Antarctic Penguins Collected between 2008 and 2013, *PLoS One*, 11(6): e0157032 (2016)
- 23) **Won-Keun Kim**, Jeong-Ah Kim, Dong Hyun Song, Daesang Lee, Yong Chul Kim, Sook-Young Lee, Seung-Ho Lee, Jin Sun No, Ji Hye Kim, Jeong Hoon Kho, Se Hun Gu, Seong Tae Jeong, Michael Wiley, Heung-Chul Kim, Terry A. Klein, Gustavo Palacios, and Jin-Won Song, Phylogeographic analysis of Hemorrhagic Fever with Renal Syndrome (HFRS) Patients and Natural Hosts using Multiplex PCR-based Next Generation Sequencing, *Scientific Reports*, 6: srep26017 (2016)
[http://science.ytn.co.kr/program/program_view.php?s_mcd=0082&s_hcd=&key=201605261101459441&page=1]
- 24) Jin Sun No*, **Won-keun Kim***, Jeong-Ah Kim, Seung-Ho Lee, Sook-Young Lee, Ji Hye Kim, Jeong Hoon Kho, Daesang Lee, Dong Hyun Song, Se Hun Gu, Seong Tae Jeong, Heung-Chul Kim, Terry A. Klein, and Jin-Won Song, Detection of Hantaan virus RNA from anti-Hantaan virus IgG seronegative rodents in a highly endemic area, the Republic of Korea, *Microbiology and Immunology*, 60(4): 268-271 (2016) ***Equal contribution**
- 25) Jie Xu, Xiomara Mercado-López, Jennifer T. Grier, **Won-keun Kim**, Lauren F. Chun, Edward B. Irvine, Yoandris Del Toro Duany, Alison Kell, Sun Hur, Michael Galr Jr., Arjun Raj, Carolina B. López, Identification of a Natural Viral RNA Motif That Optimizes Sensing of Viral RNA by RIG-I, *mBio*, 6 (5): e01265-15 (2015)
- 26) Terry A. Klein, Heung-Chul Kim, Sung-Tae Chong, Jeong-Ah Kim, Sook-Young Lee, **Won-Keun Kim**, Peter V. Nunn, Jin-Won Song, Hantaan Virus Surveillance Targeting Small Mammals at Nightmare Range, a High Elevation Military Training Area, Gyeonggi Province, Republic of Korea, *PLoS One*, 10(4): e0118483 (2015)
- 27) **Won-keun Kim**, Deepika Jain, Melissa D. Sánchez, Cynthia J. Koziol-White, Krystal Matthews, Moyar Q. Ge, Angela Haczku, Reynold A. Panettieri Jr., Matthew B. Frieman, and Carolina B. López, Deficiency of MDA5 Results in Exacerbated Chronic Post-Viral Lung Inflammation, *American Journal of Respiratory and Critical Care Medicine*, 189 (4): 437-448 (2014)
[http://bric.postech.ac.kr/myboard/read.php?id=38494&idauthorid=24053&Board=HBS_TREATISE&ttyp e=&skin=hbs_treatise]
- 28) Xiomara Mercado-López, Christopher R. Cotter, **Won-keun Kim**, Yan Sun, Luis Muñoz, Karla Tapia, and Carolina B. López, Highly Immunostimulatory RNA Derived from a Sendai Virus Defective Interfering Viral Genome, *Vaccine*, 31(48): 5713-5721 (2013)

- 29) Karla Tapia*, **Won-keun Kim***, Yan Sun, Xiomara Mercado-López, Emily Dunay, Megan Wise, Michael Adu, and Carolina B. López, Defective viral genomes arising *in vivo* provide critical danger signals for the triggering of lung anti-viral immunity, *PLoS Pathogens*, 9(10): e1003703 (2013) *Equal contribution
[Featured Research]
- 30) Byung O. Lee, Joyce E. Jones, Cory J. Peters, David Whitacre, Lars Frelin, Janice Hughes, **Won-keun Kim**, and David R. Milich, Identification of a unique double-negative regulatory T-cell population, *Immunology*, 134(4): 434-447 (2011)
- 31) Christopher R. Cotter, **Won-keun Kim**, Marie L. Nguyen, Jacob S. Yount, Carolina B. López, John A. Blaho, and Thomas M. Moran, The virion host shutoff protein of Herpes Simplex Virus 1 blocks the replication-independent activation of NF- κ B in dendritic cells in the absence of type I interferon signaling, *Journal of Virology*, 85(23): 12662-12672 (2011)

Miscellaneous

Research Interests

- 1) Development of antivirals
- 2) Next-generation sequencing: Comparative genomics
- 3) Virus-host interaction: Virology, Immunology, Epidemiology
- 4) Metagenomic analysis of virome

Patents

- 1) Composition for detecting Hepatitis A virus comprising multiplex primer set, kit for diagnosing Hepatitis A and method for obtaining Hepatitis A virus whole genome sequence (Patent number: 10-2207348)
- 2) Hantavirus Whole Genome Sequence Identification Methods Using a Multiplex PCR-based Next-Generation Sequencing and Uses Thereof (Patent number: 10-1815105)

Community activities

- 1) Won-Keun Kim, 보이지 않는 바이러스 전쟁, 그 최전방에 자리한 백신 'mRNA 백신, 인류에게 생명의 메신저가 되다' , 성대신문, Mar., 15th, 2021
- 2) Won-Keun Kim, 모더나·화이자가 '픽'한 'mRNA'...아이진·에스티팜 '주목', 한국 경제 TV, Aug., 24th, 2020
<https://www.wowtv.co.kr/NewsCenter/News/Read?articleId=A202008240264>

- 3) Won-Keun Kim, 바이러스 VS 인간 2부 '백신 X', SBS 스페셜, May 3rd, 2020
- 4) Won-Keun Kim, 인수공통병의 발생 동향과 향후 전망, BRIC View 동향리포트, BRIC View 2019-R11, Nov. 5th, 2019
- 5) Won-Keun Kim, mRNA 백신- 백신학의 새로운 시대, BRIC View 리뷰논문요약, BRIC View 2019-R11, May 23rd, 2019