Dongkyu Lee

Brain Tech Center
Korea Brain Research Institute, Daegu, Korea

PERSONAL

Born on April 1988.
Korean Citizen.

ACADEMIC EDUCATION

February 2014, **B.S.** in Computer science & engineering
Hanyang University, Ansan, Korea
February 2020, **Ph.D.** in Biomedical engineering
Ulsan National Institute of Science and Technology, Ulsan, Korea

RESEARCH

April 2024 – present, **Researcher**
Korea Brain Research Institute: Brain Tech Center, Daegu, Korea

May 2022 – March 2024, **Postdoctoral Researcher**
Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

July 2020 – March 2022, **Postdoctoral Researcher**
Institute for Basic Science (IBS): Center for Neuroscience Imaging Research (CNIR), Suwon, Korea

May 2019 – June 2020, **Postdoctoral Researcher**
Emory University: Yerkes National Primate Research Center, Atlanta, Georgia, United States of America

March 2014 – February 2020, **Combined M.S. and Ph.D. Program**
Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

January 2014 − February 2014, **UNIST Winter Undergraduate Research Fellowship**
Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

October 2011 − August 2012, **Undergraduate Research Internship**
Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

JOURNAL PUBLICATIONS

[12] Le T., Choi S. H., Im G. H., Lee C. H., Lee D. K., Schulman J., Cho H., Uludağ K., and Kim S. G., Whole-brain BOLD Responses to Graded Hypoxic Challenges at 7T, 9.4T, and 15.2T: Implications for Ultrahigh-Field fMRI and BOLD-DSC MRI. Accepted in Magnetic resonance in medicine. (2025)

[11] Lee, D., Gong, Y., Tessema, A. W., Han, S., & Cho, H. J., Resolution dependence of vessel size index across various brain regions. NeuroImage, *305*, 120979. (2025)

[10] Yoo, C. H., Goh, J., Jahng, G. H., Jin, S., Lee, D., & Cho, H., Simulation of microvascular signal changes used on a gadolinium-chelated contrast agent at 3 T MRI in the presence of amyloid-beta plaques. *Journal of the Korean Physical Society*, *81*(11), 1039-1050. (2022)

[9] Lee, D., Le, T.T., Im, G.H. and Kim, S.G., Whole-brain perfusion mapping in mice by dynamic BOLD MRI

with transient hypoxia. Journal of Cerebral Blood Flow & Metabolism, 42(12), pp.2270-2286. (2022)

[8] Chang, S. K., Kim, J., Lee, D., Yoo, C. H., Jin, S., Rhee, H. Y., ... & Jahng, G. H., Mapping of microvascular architecture in the brain of an Alzheimer's disease mouse model using MRI. NMR in Biomedicine, 34(6), e4481. (2021)

[7] Lee, D. K., M. S. Kang, & Cho, H., "MRI size assessment of cerebral microvasculature using diffusion-time-dependent stimulated-echo acquisition: A feasibility study in rodent." NeuroImage (2020).

[6] Kang, M., Jin, S., Lee, D. & Cho, H., 2020. MRI Visualization of Whole Brain Macro-and Microvascular Remodeling in a Rat Model of ischemic Stroke: A pilot Study. Scientific reports (2020)

[5] Jung, S. M., Park, J., Shin, D., Lee, D., Jeong, H. Y., Jeon, I. Y., ... & Baek, J. B. "Paramagnetic Carbon Nanosheets with Random Hole-defects and Oxygenated Functional Groups." Angewandte Chemie (2019).

[4] Lee, D., Song, Y. K., Park, B. W., Cho, H. P., Yeom, J. S., Cho, G., & Cho, H. The robustness of T2 value as a trabecular structural index at multiple spatial resolutions of 7 Tesla MRI. Magnetic resonance in medicine. (2018)

[3] Lee, D., Han, S., & Cho, H. Optimization of sparse phase encodings for variable repetition-delay turbo-spin echo (TSE) T1 measurements for preclinical applications. Journal of Magnetic Resonance, 274, 57-64. (2017)

[2] Jung, H. S., Jin, S. H., Cho, J. H., Han, S. H., Lee, D. K., & Cho, H. UTE–ΔR2–ΔR2* combined MR whole-brain angiogram using dual-contrast superparamagnetic iron oxide nanoparticles. NMR in Biomedicine, 29(6), 690-701. (2016)

[1] Han, S. H., Cho, E., Lee, D. K., Cho, G., Kim, Y. R., & Cho, H. Simulational validation of color magnetic particle imaging (cMPI). Physics in medicine and biology, 59(21), 6521. (2014)

CONFERENCE PRESENTATIONS

[12] Lee, D., Gong, Y., Han, S. and Cho, H. Rapid high-resolution mapping of cerebral blood flow and volume by dynamic BOLD MRI with transient hypoxia in mice. 2024 ISMRM & ISMRT Annual Meeting & Exhibition. (2024)

[11] Lee, D., Cerebral Perfusion Mapping by BOLD-DSC MRI. ICMRI 2023 (11th International Congress on MRI) & 28th Annual Scientific Meeting of the KSMRM. (2023)

[10] Lee, D., Le, T.T., Im, G.H. and Kim, S.G. Rapid high-resolution mapping of cerebral blood flow and volume by dynamic BOLD MRI with transient hypoxia in mice. Joint Annual Meeting ISMRM-ESMRMB & ISMRT 31st Annual Meeting. (2022)

[9] Le, T.T., Lee, D., Im, G.H. and Kim, S.G. Development of perfusion technique with dynamic BOLD MRI and transient hypoxia in mouse. Joint Annual Meeting ISMRM-ESMRMB & ISMRT 31st Annual Meeting. (2022)

[8] Lee, D. K., & Cho, H. Robust MRI assessment of cerebral microvasculature using stimulated-echo diffusion-imaging method. ISMRM 27TH ANNUAL MEETING & EXHIBITION. (2019)

[7] Lee, D. K., & Cho, H. Robust MRI assessment of cerebral microvasculature using stimulated-echo diffusion-imaging method. ICMRI 2019 & KSMRM. (2019)

[6] Lee, D. K., Song Y. K., Park, B. W., Cho, H. P., Cho, G., & Cho, H. Correlation between trabecular structural indices and magnetic resonance transverse relaxation times at multiple spatial resolutions. Joint Annual Meeting ISMRM-ESMRMB 2018. (2018)

[5] Lee, D. K., Song, Y. K., Park, B. W., Cho, H. P., Yeom, J. S., Cho, G., & Cho, H. The Robustness of T2 Relaxation Time as a Trabecular Structural Index at Multiple Spatial Resolution of 7T. ICMRI 2018 & KSMRM. (2018)

[4] Lee, D. K., Han, S., & Cho, H. Improved unbiased multi-slice T1 measurement with compressed-sensing assisted variable-repetition-delay turbo-spin echo acquisition for ultra-high field preclinical applications. ISMRM 25TH ANNUAL MEETING & EXHIBITION. (2017)

[3] Lee, D. K. & Cho, H. Correlation Study between Trabecular Structural Indices from Micro-CT and T2* Relaxation Time from Ultrashort Echo Time (UTE) Acquisitions with Multiple Spatial Resolutions. ICMRI 2017 & KSMRM. (2017)

[2] Lee, D. K., Han, S., & Cho, H. Correlation Study between Trabecular Structural Indices from Micro-CT and T2* Relaxation Time from Ultrashort Echo Time (UTE) Acquisitions with Multiple Spatial Resolutions. ICMRI 2016 & KSMRM. (2016)

[1] Lee, D. K. & Cho, H. Fast and accurate T1 estimation using CS-TSE. ICMRI 2015 & KSMRM. (2015)