

Sang-Hun Lee

Curriculum vitae

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Institutional Address

Department of Neurology
University of Arkansas for Medical Sciences (UAMS)
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Education

1997 B.S., Biology, Inha University, Incheon, South Korea
1999 M.S., Biology, Inha University, Incheon, South Korea
2005 Ph.D., Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign, IL, USA

Military Service

1992-1994 Korean Army, Sergeant (Squad Leader)

Employment History

1997-1999 Teaching Assistant, Department of Biology, Inha University, Incheon, South Korea
2006-2008 Postdoctoral Fellow, Department of Psychology, University of Illinois at Urbana-Champaign, Urbana, IL (advisors: Drs. Joseph G. Malpeli and Charles L. Cox)
2008-2010 Postdoctoral Fellow, Department of Anatomy and Neurobiology, University of California, Irvine, CA (advisor: Dr. Ivan Soltesz)
2010-2015 Project Scientist, Department of Anatomy and Neurobiology, University of California, Irvine, CA (advisor: Dr. Ivan Soltesz)
2013-2015 Project Scientist, NASA Specialized Center of Research (NSCOR), University of California, Irvine, CA (advisors: Drs. Charles L. Limoli and Ivan Soltesz)
2015-present Assistant Professor, Department of Neurology, UAMS, Little Rock, AR
2015-present Secondary Assistant Professor, Department of Neurobiology and Developmental Sciences, UAMS, Little Rock, AR

Awards

1995 Merit-based scholarship, Department of Biology, Inha University, Incheon, South Korea
2003 Travel grant, Department of Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign to attend the Society for Neuroscience 33th Annual Meeting
2004 Travel grant, Graduate School of University of Illinois at Urbana-Champaign to attend the Society for Neuroscience 34th Annual Meeting
2006 Best poster presentation by a postdoctoral fellow for the MIP retreat, Department of Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign
2009 Postdoctoral research fellowship (EFA-45197), Epilepsy Foundation of America

Professional Societies

2002-present Member, Society for Neuroscience

- 2015 Associate member, Radiation Research Society
 2016-present Member, Korean-American Scientists and Engineers Association

Service to Professional Publications

- 2016-present Ad hoc Referee for *British Journal of Pharmacology* (1 paper), *Metabolic Brain Disease* (1 paper), *BMC Neuroscience* (1 paper)

Teaching and Mentoring

Formal teaching:

<u>Dates</u>	<u>Course Title</u>	<u>Role</u>	<u>School</u>
1997	Biology Lab	TA	Inha University, South Korea
1998	Biochemistry Lab	TA	Inha University, South Korea
2003	Systems and Integrative Physiology	TA	University of Illinois at Urbana-Champaign
2004	Physiology Lab	TA	University of Illinois at Urbana-Champaign
2016	Basic Science Lectures (Residents)	Instructor	UAMS

High school students:

- 2012 Avneesh Sharma (Sunny Hills High School, Fullerton, CA), UC Irvine
 2016 David Davila (Episcopal Collegiate School, Little Rock, AR), UAMS

Undergraduate students:

- 2012 Oscar Rodriguez (Minority Science Program, undergraduate student), UC Irvine
 2012-2015 Michelle Oberoi (Minority Science Program, undergraduate student), UC Irvine

Medical students:

- 2016-present Mason Young, UAMS
 2016-present Hannah Smashey, UAMS

Postdoctoral fellows:

- 2015-present Young-Jin Kang, UAMS

Student/Trainee Awards

- 2012 Poster presentation winner, Awardee Name: Michelle Oberoi (undergraduate student). Annual Biomedical Research Conference for Minority Students, San Jose, CA, November 2012. An award based on the work under my guidance.
- 2013 Poster presentation winner, Awardee Name: Michelle Oberoi (undergraduate student). Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Conference, San Antonio, TX, October 2013. An award based on the work under my guidance.
- 2013 First place poster presentation among graduate and undergraduate presenters within Brain and Behavior division, Awardee Name: Michelle Oberoi (undergraduate student). American Association for the Advancement of Science (AAAS) Annual Meeting, Boston, MA, February 2013. An award based on the work under my guidance.

Invited Talks

- 2008 Department of Biology, Inha University, South Korea
 2008 Interdisciplinary Program in Neuroscience, Seoul National University, South Korea
 2008 Department of Pharmacology, Hallym University, South Korea
 2015 Department of Neurology, UAMS, USA
 2015 Department of Neurobiology and Developmental Sciences, UAMS, USA

Research Support

Current

5/1/2016-
4/30/2017 Pilot study grant from the Center for Translational Neuroscience at UAMS, funded by National Institutes of Health NIGMS IDeA Award (P30GM110702)
Principal Investigator: S.H. Lee
Title: Intrinsic gamma oscillations of hippocampal GABAergic interneurons
\$50,000

Past

1/1/2009-
12/31/2009 Postdoctoral research fellowship (EFA-45197), Epilepsy Foundation of America
Principal Investigator: S.H. Lee
Title: The impact of blocking CB₁ during febrile seizures on GABA release
\$45,000

Publications

1. **Lee S.H.**, Yang S.C., Park J.K., Jung M.W., and Lee C.J. (2000) Reduction of electrically evoked neural activity by ginseng saponin in rat hippocampal slices, Biological & Pharmaceutical Bulletin 23(4): 411-414
2. Yang S.C, **Lee S.H.**, Park J.K., Jung M.W., and Lee C.J. (2000) Ginsenoside Rb₁ reduces spontaneous bursting activity in thalamocortical slices of the rat, Journal of Ginseng Research 24(3): 134-137.
3. **Lee S.H.** and Cox C.L. (2003) Vasoactive intestinal peptide selectively depolarizes thalamic relay neurons and attenuates intrathalamic rhythmic activity, Journal of Neurophysiology 90: 1224-1234.
4. **Lee S.H.** and Cox C.L. (2006) Excitatory actions of vasoactive intestinal peptide on mouse thalamocortical neurons are mediated by VPAC₂ receptors, Journal of Neurophysiology 96: 858-871.
5. **Lee S.H.**, Govindaiah G., and Cox C.L. (2007) Heterogeneity of firing properties among rat thalamic reticular nucleus neurons, Journal of Physiology 582: 195-208.
6. **Lee S.H.** and Cox C.L. (2008) Excitatory actions of peptide histidine isoleucine on thalamic relay neurons, Neuropharmacology 55: 1329-1339.
7. Lee Y., Park E., **Lee S.H.**, Kim Y.W. and Lee C.J. (2009) Ginsenoside Rg₁ reduced spontaneous epileptiform discharges and behavioral seizure in the zebrafish, Journal of Ginseng Research 33(1): 48-54.
8. **Lee S.H.***, Govindaiah G. *, and Cox C.L. (2010) Selective excitatory actions of DNQX and CNQX in rat thalamic neurons, Journal of Neurophysiology 103: 1728-1734. *These authors contributed equally to this work.
9. **Lee S.H.**, Földy C., and Soltesz I. (2010) Distinct endocannabinoid control of GABA release at perisomatic and dendritic synapses in the hippocampus, Journal of Neuroscience 30: 7993-8000.
10. Földy C., **Lee S.H.**, Morgan R.J., and Soltesz I. (2010) Regulation of fast-spiking basket cell synapses by the chloride channel ClC2, Nature Neuroscience 13: 1047-1049.
• Highlighted in News and Views, Nature Neuroscience, 13: 1043-1044.

11. **Lee S.H.** and Soltesz I. (2011) Requirement for CB₁ but not GABA_B receptors in the cholecystokinin mediated inhibition of GABA release from cholecystokinin expressing basket cells, Journal of Physiology 589:891-902
12. Krook-Magnuson E., Luu L., **Lee S.H.**, Varga C., and Soltesz I. (2011) Ivy and neurogliaform interneurons are a major target of μ opioid receptor modulation, Journal of Neuroscience 31:14861-14870.
13. Krook-Magnuson E., Varga C., **Lee S.H.**, and Soltesz I. (2012) New dimensions of interneuronal specialization unmasked by principal cell heterogeneity, Trends in Neurosciences 35: 175-184.
14. Ma R., Cui H., **Lee S.H.**, Anastasio T.J., and Malpeli J.G. (2013) Predictive encoding of moving target trajectory by neurons in the parabigeminal nucleus, Journal of Neurophysiology 109: 2029-2043.
15. **Lee S.H.***, Marchionni I.*, Bezaire M., Varga C., Danielson N., Lovett-Barron M., Losonczy A., and Soltesz, I. (2014) Parvalbumin-positive basket cells differentiate among hippocampal pyramidal cells, Neuron 82: 1129-1244. *These authors contributed equally to this work.
 - Evaluated by Faculty of 1000: <http://f1000.com/prime/718391812>
 - Highlighted with a video abstract: <https://www.youtube.com/watch?v=KiVdY6XZAL0>
16. Dudok B., Barna L., Szabó S., Szabadits E., Pintér B., Woodhams S.G., Henstridge C.M., Balla G.Y., Nyilas R., Varga C., **Lee S.H.**, and et al. (2015) Cell type-specific STORM superresolution imaging reveals nanoscale organization of cannabinoid signaling at hippocampal GABAergic synapses, Nature Neuroscience 18: 75-86.
 - Evaluated by Faculty of 1000: <http://f1000.com/prime/725267801>
17. Soltesz I., Alger B., Kano M., **Lee S.H.**, Lovinger D., Ohno-Shosaku T., and Watanabe M. (2015) Weeding out bad waves: Towards selective cannabinoid circuit control, Nature Reviews Neuroscience 16: 264-277.
 - Evaluated by Faculty of 1000: <http://f1000.com/prime/725443754>
18. **Lee S.H.***, Ledri M.*, Tóth B.*, Marchionni I., Henstridge C. M., Dudok B., Kenesei K., Barna L., Szabó S.I., Renkecz T., Oberoi M., Watanabe M., Limoli C.L., Horvai G., Soltesz I., and Katona I. (2015) Multiple forms of endocannabinoid and endovanilloid signaling regulate the tonic control of GABA release, Journal of Neuroscience 35: 10039-10057. *These authors contributed equally to this work.
 - Evaluated by Faculty of 1000: <http://f1000.com/prime/725624269>
19. Armstrong C., Wang J., Lee S.Y., Broderick J., Bezaire M., **Lee S.H.**, and Soltesz I. (2016) Target-selectivity of parvalbumin-positive interneurons in layer II of medial entorhinal cortex in normal and epileptic animals, Hippocampus 26:779-793.
20. Maroso M., Szabo G.G., Kim H.K., Alexander A., Bui A., **Lee S.H.**, Lutz B., and Soltesz I. (2016) Cannabinoid control of learning and memory through HCN channels, Neuron 89: 1059-1073.
 - Highlighted in Previews, Neuron, 89: 889-891.

21. **Lee S.H.***, Dudok B, Parihar V.K., Jung K.M., Miklós Z., Kang Y.J., Maroso M., Alexander A.L., Nelson G.A., Piomelli D., Katona I., Limoli C.L., and Soltesz I. (2016) Neurophysiology of space travel: Energetic solar particles cause cell type-specific plasticity of neurotransmission, Brain Structure & Function DOI: 10.1007/s00429-016-1345-3. *Corresponding author.