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Education / Research experience

2013. 7. – 2018. 2. **Ph. D.**

Neurobiology Department, University of Massachusetts Medical School, Worcester, MA

Research Advisor : Marc R. Freeman, PhD

Research Focus : Astrocyte function in neural circuitry

2012. 4. – 2013. 6. **Research Assistant**

Picower Institute for Learning and Memory, MIT, Cambridge, MA

Research Advisor : Li-Huei Tsai, PhD

2010. 8. – 2012. 1. **Graduate student**

Department of Biological Science and Program in Neuroscience, Florida State University, Tallahassee, FL

Research Advisor : Debra A. Fadool, PhD

Research Focus : The mechanism of glucose sensitivity in mouse olfactory bulb neurons

2006. 9. – 2008. 8. **M.S.**

Interdisciplinary Pro gram in Neuroscience, Seoul National University, Seoul, Korea

Research Advisor : Se-Young Choi, PhD

Research Focus : Toll-like receptor 3-induced activation restores visual cortical plasticity in adult rat brain

2001. 3. – 2006. 2. **B.S.**

Department of Biology, Dongguk University, Seoul, Korea

Research Focus : Cellular repair of oxidative deoxyribose damage by DNA polymerase β mediated DNA repair

Publications

1. **Cho S***, Muthukumar AK*, Stork T, Coutinho-Budd JC, Freeman MR (2018) Astrocyte focal adhesions molecules regulate astrocyte morphology and glutamate transporters to suppress seizure-like behavior. *PNAS in press*
2. Seo J*, Kristskiy O*, Watson LA, Barker SJ, Dey D, Raja WK, Lin YT, Ko T, **Cho S**, Penney J, Silva MC, Sheridan SD, Lucente D, Gusella JF, Dickerson BC, Haggarty SJ, Tsai LH (2017) Inhibition of p25/Cdk5 attenuates tauopathy in mouse and iPSC models of frontotemporal dementia. *J Neurosci* 37(41):9917-9925.
3. Esteves da Silva M, Adrian M, Schätzle P, Lipka J, Watanabe T, **Cho S**, Futai K, Wierenga CJ, Kapitein LC, Ohhgenraad CC. (2015) Positioning of AMPA receptor-containing endosomes regulates synapse architecture. *Cell Rep.* 13(5):933-43.
4. Madabhushi R, Gao F, Pfenning AR, Pan L, Yamakawa S, Seo J, Rueda R, Phan TX, Yamakawa H, Pao PC, Stott RT, Gjoneska E, Nott A, **Cho S**, Kellis M, Tsai LH. (2015) Activity-induced DNA breaks govern the expression of neuronal early-response genes. *Cell* 161(7):1592-605.
5. Siegert S, Seo J*, Kwon EJ*, Rudenko A*, **Cho S**, Wang W, Flood Z, Martorell AJ, Ericsson M, Mungenast AE, Tsai LH. (2015) The schizophrenia risk gene product miR-137 alters presynaptic plasticity. *Nat Neurosci.* 18(7):1008-16.
6. Rei D, Mason X*, Seo J*, Gräff J, Rudenko A, Wang J, Rueda R, Siegert S, **Cho S**, Canter RG, Mungenast AE, Deisseroth K, Tsai LH. (2015) Basolateral amygdala bidirectionally modulates stress-induced hippocampal

- learning and memory deficits through a p25/Cdk5-dependent pathway. *Proc Natl Acad Sci U S A* 112(23):7291-6.
7. Mao W, Watanabe T, **Cho S**, Frost JL, Truong T, Zhao X, Futral K. (2015) Shank1 regulates excitatory synaptic transmission in mouse hippocampal parvalbumin-expressing inhibitory interneurons. *Eur J Neurosci*. 41(8):1025-35.
 8. Nott A*, **Cho S***, Seo J, Tsai LH. (2015) HDAC2 expression in parvalbumin interneurons regulates synaptic plasticity in the mouse visual cortex. *Neuroepigenetics* 1:34-40.
 9. Park H*, Han KS*, Seo J*, Lee J*, Dravid SM, Woo J, Chun H, **Cho S**, Bae JY, An H, Koh W, Yoon BE, Berlinguer-Palmini R, Mannaioni G, Traynelis SF, Bae YC, Choi SY, Lee CJ. (2015) Channel-mediated astrocytic glutamate modulates hippocampal synaptic plasticity by activating postsynaptic NMDA receptors. *Mol Brain* 8(1):7.
 10. Bero AW, Meng J, **Cho S**, Shen AH, Canter RG, Ericsson M, Tsai LH. (2014) Early remodeling of the neocortex upon episodic memory encoding. *Proc Natl Acad Sci U S A*. 111(32):11852-7.
 11. Seo J, Giusti-Rodriguez P, Zhou Y, Rudenko A, **Cho S**, Ota KT, Park C, Patzke H, Madhushi R, Pan L, Mungenast AE, Guan JS, Delalle I, Tsai LH. (2014) Activity-dependent p25 generation regulates synaptic plasticity and A β -induced cognitive impairment. *Cell* 157(2):486-98.
 12. Chung CY, Khurana V, Auluck PK, Tardiff DE, Mazzulli JR, Soldner F, Baru V, Lou Y, Freyzon Y, **Cho S**, Mungenast AE, Muffat J, Mitalipova M, Pluth MD, Jui NT, Schüle B, Lippard SJ, Tsai LH, Krainc D, Buchwald SL, Jaenisch R, Lindquist S. (2013) Identification and rescue of α -synuclein toxicity in Parkinson patient-derived neurons. *Science* 342(6161):983-7.
 13. Su SC, Rudenko A, **Cho S**, Tsai LH. (2013) Forebrain-specific deletion of Cdk5 in pyramidal neurons results in mania-like behavior and cognitive impairment. *Neurobiol Learn Mem*. 105: 54-62.
 14. Tucker K*, **Cho S***, Thiebaud N, Henderson MX, Fadool DA. (2013) Glucose sensitivity of mouse olfactory bulb neurons is conveyed by a voltage-gated potassium channel. *J Physiol*. 591(10): 2541-61.
 15. Kang JA, Lee K, Lee KM, **Cho S**, Seo J, Hur EM, Park CS, Baik JH, Choi SY. (2012) Desipramine inhibits histamine H1 receptor-induced Ca²⁺ signaling in rat hypothalamic cells. *PLoS One* 7(4):e36185
 16. Won H, Mah W, Kim E, Kim JW, Hajm EK, Kim MH, **Cho S**, Kim J, Jang H, Cho SC, Kim BN, Shin MS, Seo J, Jeong J, Choi SY, Kim D, Kang C, Kim E. (2011) GIT1 is associated with ADHD in humans and ADHD-like behaviors in mice. *Nat Med*. 17(5): 566-72.
 17. Han S, Nam J, Li Y, Kim S, **Cho SH**, Cho YS, Choi SY, Choi J, Han K, Kim Y, Na M, Kim H, Bae YC, Choi SY, Kim E. (2010) Regulation of dendritic spines, spatial memory, and embryonic development by the TANC family of PSD-95-interacting proteins. *J Neurosci*. 30(45):15102-12.
 18. Kim D*, **Cho SH***, Kim JS, Jo SH, Lee SJ, Kim KT, Choi SY. (2010) Human astrocytic bradykinin B(2) receptor modulates zymosan-induced cytokine expression in 1321N1 cells. *Peptides* 31(1):101-7.
 19. Kim MH*, Choi J*, Yang J*, Chung W*, Kim JH, Paik SK, Kim K, Han S, Won H, Bae YS, **Cho SH**, Seo J, Bae YC, Choi SY, Kim E. (2009) Enhanced NMDA receptor-mediated synaptic transmission, enhanced long-term potentiation, and impaired learning and memory in mice lacking IRSp53. *J Neurosci*. 29(5):1586-95.

* indicates equal contribution

Honors and Awards

- Mogam Scholarship, Mogam Foundation, 2013. 10.
- Outstanding Poster Presentation Award, BK21 Seoul National University, 2008.2.
- Excellent Thesis Prize, Dongguk University, 2006.2.