

## **CURRICULUM VITAE**

### **Ege Taner Kavalali**

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### **PERSONAL INFORMATION**

Date of birth: September 6, 1969; Istanbul, Turkey  
Citizenship: U.S.A.

### **EDUCATION AND TRAINING**

1995-1999 Postdoctoral Fellow, Department of Molecular and Cellular Physiology, Stanford University, Stanford, California (Supervisor: Dr. Richard W. Tsien)  
1998 Molecular Cloning of Neural Genes Course, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York  
1995 Ph.D. Biomedical Engineering, Rutgers University, New Brunswick, New Jersey (Supervisor: Dr. Mark R. Plummer)  
1990 B.S. Electrical Engineering, Boğaziçi University, Bebek, Istanbul, Turkey  
1989 Engineering Trainee at EMCO Maier & Co., Hallein, Austria  
1988 Engineering Trainee at TELETAS Communications Inc., Istanbul, Turkey  
1986 Terakki Vakfı Şişli Terakki Lisesi (Lycée), Nişantaşı, Istanbul, Turkey

### **ACADEMIC POSITIONS**

2019- Acting Chair, the Department of Pharmacology, Vanderbilt University  
2019- Professor, the Department of Biological Sciences, Vanderbilt University  
2018- William Stokes Chair in Experimental Therapeutics  
2018-2019 Vice Chair for Research, the Department of Pharmacology, Vanderbilt University  
2018- Professor, the Department of Pharmacology, Vanderbilt University  
2011 - 2018 Rosewood Corporation Chair in Biomedical Science  
2010- 2018 Professor, the Department of Neuroscience and the Department of Physiology, UT Southwestern Medical Center  
2008-2016 Chair, Graduate Program in Neuroscience, Division of Basic Science, UT Southwestern Medical Center  
2005-2010 Associate Professor (with Tenure), the Department of Neuroscience and the Department of Physiology, UT Southwestern Medical Center  
1999-2005 Assistant Professor, Center for Basic Neuroscience and the Department of Physiology, UT Southwestern Medical Center

### **AWARDS/HONORS**

2018 Award for Excellence in Postdoctoral Mentoring, UT Southwestern Postdoctoral Association  
2016 Chair, Gordon Research Conference on Synaptic Transmission  
2015 Special Lecture, Society for Neuroscience Meeting, Chicago  
2014 Vice Chair, Gordon Research Conference on Synaptic Transmission  
2013 NARSAD Distinguished Investigator Award (Brain & Behavior Research Foundation)  
2006 American Heart Association Established Investigator Award

- 1999 Effie Marie Cain Scholar in Medical Research,  
UT Southwestern Medical Center at Dallas.
- 1996 American Heart Association California Affiliate Postdoctoral Fellowship,  
Stanford University, Stanford, California
- 1994-1995 Charles and Johanna Busch Research Fellowship,  
Rutgers University, New Brunswick, New Jersey
- 1990 Graduating with Honors, Department of Electrical Engineering,  
Boğaziçi University, Istanbul, Turkey
- 1986 “Türkiye İş Bankası” Award (for ranking 20th in 1986 Turkish University  
Entrance Examinations)

### **PROFESSIONAL AFFILIATIONS**

- 1994- Society for Neuroscience  
1994- Biophysical Society

### **EDITORIAL BOARDS, PEER REVIEW**

- 2018 Member of Editorial Board, Journal of Neuroscience Research
- 2018 Ad Hoc Member, Board of Scientific Councilors, NINDS
- 2017 Associate Editor, Journal of Neuroscience Research Special Issue on  
Spontaneous Neurotransmission
- 2017 External Reviewer, The School of Life Sciences & McGovern Institute for Brain  
Research at Peking University, Beijing, China
- 2016 External Reviewer, Neurosciences Graduate Program, Stanford University,  
Stanford, CA
- 2015 Subcommittee for the Neurobiology Division Review of the MRC Laboratory of  
Molecular Biology, Cambridge, UK
- 2014- Member of Editorial Board, Synapse
- 2014-2015 NIMH Review Panel for Silvio O. Conte Centers for Basic or Translational Mental  
Health Research
- 2014 Ad Hoc Member, Board of Scientific Councilors, NINDS
- 2013-present Member Advisory Board, SFB 1089 Synaptic Microcircuits, University of Bonn  
Medical Center, Bonn, Germany
- 2013-present Reviewing Editor, The Journal of Neuroscience
- 2011-present Member, Faculty of 1000
- 2016-2017 Chair, Neurotransporters, Receptors, and Calcium Signaling study section  
(NTRC), NIH Center for Scientific Review
- 2011-2016 Member, Neurotransporters, Receptors, and Calcium Signaling study section  
(NTRC), NIH Center for Scientific Review
- 2011- 2018 Member, Promotions and Tenure Committee, UT Southwestern Medical Center
- 2008-2013 Associate Editor, The Journal of Neuroscience
- 2000-present

#### **Frequent Reviewer for:**

**Journals:** Cell, eLife, Nature Communications, Nature Neuroscience,  
Nature Reviews Neuroscience, Neuron, Proceedings of the National Academy of  
Sciences of the USA, Science.

**Grants:** Israel Science Foundation, Italian Telethon Foundation, Medical  
Research Council (U.K.), NIH Center for Scientific Review and Special  
Emphasis Panels, The Biotechnology and Biological Sciences Research  
Council (U.K.), The Wellcome Trust (U.K.), United States-Israel Binational  
Science Foundation, Deutsche Forschungsgemeinschaft, Novo Nordisk Fonden.

## **TEACHING AND SERVICE**

- 2018-2019 Member, Vanderbilt Brain Institute Faculty Search Committee, Vanderbilt University
- 2018 Organizer, Society for Neuroscience Basic- Translational-Clinical Roundtable on Rapid Antidepressant Action (Synaptic Mechanisms and Clinical Aspects)
- 2017 Organizer, History of Neuroscience Journal Club, UT Southwestern Medical Center
- 2017-2018 Member, Neurology Chair Search Committee, UT Southwestern Medical Center
- 2017 Promotion & Tenure Workshop, The Office of Faculty Diversity and Development and the Office of Women's Careers, UT Southwestern Medical Center
- 2011- 2012 Member, Neurosurgery Chair Search Committee, UT Southwestern Medical Center
- 2010-2016 Director, The Cellular Biophysics of the Neuron Training Program, National Institute of Neurological Diseases and Stroke (T32 NS069562).
- 2009-2012 Member, Society for Neuroscience Program Committee
- 2008-2014 Member, Department of Neuroscience Faculty Search Committee, UT Southwestern Medical Center
- 2008-2010 Member, Psychiatry Chair Search Committee, UT Southwestern Medical Center
- 2008-2016 Member, Division of Basic Science Steering Committee, UT Southwestern Medical Center
- 2007-2008 Member, Biophysical Society, Exocytosis/Endocytosis Subgroup Council
- 2006-2014 Member, Oversight Committees for the Live Cell Imaging, the Molecular and Cellular Imaging and the Mouse Metabolism Facilities, UT Southwestern Medical Center
- 2005-2007 Coordinator, Neuroscience Graduate Program Qualifying Examinations  
UT Southwestern Medical Center
- 2006-2008 Chair, International Graduate Admissions Committee, Division of Basic Science,  
UT Southwestern Medical Center
- 2005-2008 Member, Graduate Admissions Committee, Division of Basic Science,  
UT Southwestern Medical Center
- 2001-2010 Organizer and lecturer, Chemical Neurotransmission course,  
UT Southwestern Medical Center
- 2001-2010 Coordinator, Neuroscience Seminar Series, Department of Neuroscience,  
UT Southwestern Medical Center
- 1999-2018 Member, Neuroscience and Molecular Biophysics Graduate Programs at  
UT Southwestern. In this capacity, lecturer in several Neuroscience courses,  
member of qualifying examination committees, Ph.D. thesis committees, and  
Ph.D. supervisor to 8 students (8 graduated).
- 1997 Guest Lecturer, Mechanisms of Signal Transduction (MCB 230),  
University of California at Berkeley.
- 1991-1994 Teaching Assistant, Department of Biological Sciences,  
Rutgers University, New Brunswick, New Jersey.
- 1988-1989 Teaching Assistant, Department of Physics,  
Boğaziçi University, Istanbul, Turkey.

## BIBLIOGRAPHY

### **Thesis and Dissertation**

1. **Kavalali ET** (1990). A computer simulation of K<sup>+</sup> and Na<sup>+</sup> channels from Hodgkin-Huxley kinetics. Senior thesis. Bogaziçi University, Istanbul, Turkey.  
Advisor: Prof. Yusuf P. Tan, Institute of Biomedical Engineering
2. **Kavalali ET** (1995). Functional characterization of calcium channel potentiation in rat hippocampal neurons. Ph.D. dissertation. Rutgers University, New Brunswick, N.J.  
Advisor: Prof. Mark R. Plummer, Department of Biological Sciences

### **Research Articles**

1. **Kavalali ET**, Plummer MR (1994). Selective potentiation of a novel calcium channel in rat hippocampal neurones. *The Journal of Physiology (Lond.)* 480: 475-484.
2. **Kavalali ET**, Plummer MR (1996). Multiple voltage-dependent mechanisms potentiate calcium channel activity in hippocampal neurons. *The Journal of Neuroscience* 16: 1072-1082.
3. **Kavalali ET**, Hwang KS, Plummer MR (1997). cAMP-dependent enhancement of dihydropyridine-sensitive calcium channel availability in hippocampal neurons. *The Journal of Neuroscience* 17: 5334-5348.
4. **Kavalali ET**, Zhuo M, Bito H, Tsien RW (1997). Dendritic Ca<sup>2+</sup> channels characterized by recordings from isolated hippocampal dendritic segments. *Neuron* 18: 651-663.
5. Klingauf J \*, **Kavalali ET** \*, Tsien RW (1998). Kinetics and regulation of fast endocytosis at hippocampal synapses. *Nature* 394: 581-585. (\*Equal contribution)
6. **Kavalali ET**, Klingauf J, Tsien RW (1999). Properties of fast endocytosis at hippocampal synapses. *Philosophical Transactions of Royal Society London B* 354: 337-346.
7. **Kavalali ET**, Klingauf J, Tsien RW (1999). Activity-dependent regulation of synaptic clustering in a hippocampal culture system. *Proceedings of the National Academy of Sciences of the USA* 96: 12893-12900.
8. Pyle JL, **Kavalali ET**, Choi S, Tsien RW (1999). Visualization of synaptic activity in hippocampal slices with FM1-43 enabled by fluorescence quenching. *Neuron* 24: 803-808.
9. Pyle JL, **Kavalali ET**, Piedras-Renteria ES, Tsien RW (2000). Rapid reuse of readily releasable pool vesicles at hippocampal synapses. *Neuron* 28: 221-231.
10. Schoch S, Deák F, Königstorfer A, Mozhayeva M, Sara Y, Südhof TC \*, **Kavalali ET** \* (2001). SNARE function analyzed in synaptobrevin/VAMP knockout mice. *Science* 294:1117-1122 (\*Corresponding Authors).
11. Mozhayeva MG, Sara Y, Liu X, **Kavalali ET** (2002). Development of vesicle pools during maturation of hippocampal synapses. *The Journal of Neuroscience* 22: 654-665.
12. Sara Y, Mozhayeva MG, Liu X, **Kavalali ET** (2002). Fast vesicle recycling supports neurotransmission during sustained stimulation at hippocampal synapses. *The Journal of Neuroscience* 22: 1608-1617.

13. Biederer T, Sara Y, Mozhayeva M, Atasoy D, Liu X, **Kavalali ET**, Südhof TC (2002). SynCAM, a synaptic adhesion molecule that drives synapse assembly. *Science* 297:1525-1531.
14. Virmani T, Han W, Liu X, Südhof TC, **Kavalali ET** (2003). Synaptotagmin 7 splice variants differentially regulate synaptic vesicle recycling. *EMBO Journal* 22: 5347-5357.
15. Mozhayeva MG, Matos MF, Liu X, **Kavalali ET** (2004). Minimum essential factors required for vesicle mobilization at hippocampal synapses. *The Journal of Neuroscience* 24: 1680-1688.
16. Piedras-Rentería ES, Pyle JL, Diehn M, Glickfeld LL, Harata CN, Cao Y, **Kavalali ET**, Brown PO, Tsien RW (2004). Presynaptic homeostasis at CNS nerve terminals compensates for lack of a key Ca<sup>2+</sup> entry pathway. *Proceedings of the National Academy of Sciences of the USA* 101: 3609-3614.
17. Deák F, Schoch S, Liu X, Südhof TC \*, **Kavalali ET\*** (2004). Synaptobrevin is essential for fast synaptic vesicle endocytosis. *Nature Cell Biology* 6: 1102-1108 (\*Corresponding Authors).
18. Sara Y, Biederer T, Atasoy D, Chubykin A, Mozhayeva MG, Südhof TC, **Kavalali ET** (2005). Selective capability of SynCAM and Neuroligin for functional synapse assembly. *The Journal of Neuroscience* 25: 260-270
19. Sara Y, Virmani T, Deák F, Liu X., **Kavalali ET** (2005). An isolated pool of vesicles recycles at rest and drives spontaneous neurotransmission. *Neuron* 45: 563-573
20. Luikart BW, Nef S, Virmani T, Lush ME, Liu Y, **Kavalali ET**, Parada LF (2005). TrkB has a cell-autonomous role in the establishment of hippocampal schaffer collateral synapses. *The Journal of Neuroscience* 25: 3774-3786
21. Virmani T, Gupta P, Liu X, **Kavalali ET**, Hofmann SL (2005). Progressively reduced synaptic vesicle pool size in cultured neurons derived from neuronal ceroid lipofuscinosis-1 knockout mice. *Neurobiology of Disease* 20: 314-323
22. Chen Y, Beffert U, Ertunc M, Tang T-S, **Kavalali ET**, Bezprozvanny I, Herz J (2005). Reelin Modulates NMDA Receptor Activity in Cortical Neurons. *The Journal of Neuroscience* 25: 8209-8216
23. Virmani T, Ertunc M, Sara Y, Mozhayeva M, **Kavalali ET** (2005). Phorbol Esters Target the Activity-Dependent Recycling Pool and Spare Spontaneous Vesicle Recycling. *The Journal of Neuroscience* 25:10922-10929.
24. Mahgoub MA, Sara Y, **Kavalali ET**, Monteggia LM (2006). Reciprocal interaction of 5-HT and neuronal activity in regulation of CRE-dependent gene expression. *The Journal of Pharmacology and Experimental Therapeutics* 317: 88-96.
25. Virmani T, Atasoy D, **Kavalali ET** (2006). Synaptic vesicle recycling adapts to chronic changes in activity. *The Journal of Neuroscience* 26: 2197-2206.
26. Nelson ED, **Kavalali ET**, Monteggia LM (2006). MeCP2-dependent transcriptional repression regulates excitatory neurotransmission. *Current Biology* 16: 710-716.

27. Deák F, Shin OH, Tang J, Hanson P, Ubach J, Jahn R, Rizo J, **Kavalali ET**, Südhof TC (2006). Rabphilin regulates SNARE-dependent re-priming of synaptic vesicles for fusion. *EMBO Journal* 25: 2856–2866.
28. Deák F, Shin OH, **Kavalali ET**\*, Südhof TC\*(2006). Structural determinants of synaptobrevin 2 function in synaptic vesicle fusion. *The Journal of Neuroscience* 26: 6668-6676 (\*Corresponding Authors).
29. Ertunc M, Sara Y, Chung C, Atasoy D, Virmani T, **Kavalali ET** (2007). Fast synaptic vesicle reuse slows the rate of synaptic depression in the CA1 region of hippocampus. *The Journal of Neuroscience* 27: 341-354.
30. Wasser C, Ertunc M, Liu X, **Kavalali ET** (2007). Cholesterol-dependent balance between evoked and spontaneous synaptic vesicle recycling. *The Journal of Physiology (Lond.)* 579: 413-429.
31. Atasoy D, Schoch S, Ho A, Nadasy KA, Liu X, Zhang W, Mukherjee K, Nosyreva ED, Fernandez-Chacon R, Missler M, **Kavalali ET**, Südhof TC (2007). Deletion of CASK in mice is lethal and impairs synaptic function. *Proceedings of the National Academy of Sciences of the USA* 104: 2525-2530.
32. Chubykin AA, Atasoy D, Etherton MR, Brose N, **Kavalali ET**, Gibson JR, Südhof TC (2007). Activity-Dependent Validation of Excitatory versus Inhibitory Synapses by Neuroligin-1 versus Neuroligin-2. *Neuron* 54: 919-931.
33. Bronk P, Deák F, Wilson MC, Liu X, Südhof TC, **Kavalali ET** (2007). Differential effects of SNAP-25 deletion on Ca<sup>2+</sup>-dependent and Ca<sup>2+</sup>-independent neurotransmission. *Journal of Neurophysiology* 98: 794-806.
34. Nelson ED, **Kavalali ET**\*, Monteggia LM\*(2008). Activity-dependent suppression of miniature neurotransmission through the regulation of DNA methylation. *The Journal of Neuroscience* 28: 395-406 (\*Corresponding Authors).
35. Barbosa AC, Kim M, Ertunc M, Adachi M, Nelson ED, McAnally J, Richardson JA, **Kavalali ET**, Monteggia LM, Bassel-Duby R, Olson EN (2008). MEF2C, a transcription factor that facilitates learning and memory by negative regulation of synapse numbers and function. *Proceedings of the National Academy of Sciences of the USA* 105:9391-9396.
36. Chung C, Deak F, **Kavalali ET** (2008). Molecular substrates mediating lanthanide-evoked neurotransmitter release in central synapses. *Journal of Neurophysiology* 100: 2089-2100.
37. Atasoy D, Ertunc M, Moulder KL, Blackwell J, Chung C, Su J, **Kavalali ET** (2008). Spontaneous and evoked glutamate release activates two populations of NMDA receptors with limited overlap. *The Journal of Neuroscience* 28: 10151-10166.
38. Espinosa F, **Kavalali ET** (2009). NMDA receptor activation by spontaneous glutamatergic neurotransmission. *Journal of Neurophysiology* 101: 2290-2296.
39. Darios F, Wasser C, Shakirzyanova A, Giniatullin A, Goodman K, Munoz-Bravo JL, Raingo J, Jorgacevski J, Kreft M, Zorec R, Rosa JM, Gandia L, Gutiérrez LM, Binz T, Giniatullin R, **Kavalali ET**, Davletov B (2009). Sphingosine targets synaptobrevin and activates synaptic vesicle exocytosis. *Neuron* 62: 683-694.

40. Akhtar MW, Raingo J, Nelson ED, Montgomery RL, Olson EN, **Kavalali ET\***, Monteggia LM\* (2009). Histone deacetylases 1 and 2 form a developmental switch that controls excitatory synapse maturation and function. *The Journal of Neuroscience* 29: 8288-8297 (\*Corresponding Authors).
41. Deák F, Liu X, Khvotchev M, Li G, **Kavalali ET**, Sugita S, Südhof TC (2009).  $\alpha$ -Latrotoxin stimulates a novel pathway of  $\text{Ca}^{2+}$ -dependent synaptic exocytosis independent of the classical synaptic fusion machinery. *The Journal of Neuroscience* 29: 8639-8648.
42. Durakoglugil M, Chen Y, White CL, **Kavalali ET**, Herz J (2009). Reelin Signaling Antagonizes  $\beta$ -Amyloid at the Synapse. *Proceedings of the National Academy of Sciences of the USA* 106: 15938-15943.
43. Chung C, Barlyko B, Leitz J, Liu X, **Kavalali ET** (2010). Acute dynamin inhibition dissects synaptic vesicle recycling pathways that drive spontaneous and evoked neurotransmission. *The Journal of Neuroscience* 30:1363-1376.
44. Nosyreva E, **Kavalali ET** (2010). Activity-Dependent Augmentation of Spontaneous Neurotransmission during Endoplasmic Reticulum Stress. *The Journal of Neuroscience* 30:7358-7368.
45. Sara Y, Bal M, Adachi M, Monteggia LM, **Kavalali ET** (2011). Use-dependent AMPA receptor block reveals segregation of spontaneous and evoked glutamatergic neurotransmission. *The Journal of Neuroscience* 31:5378-5382.
46. Zhao M, Raingo J, Chen ZJ, **Kavalali ET** (2011). Cc2d1a, a C2 domain containing protein linked to non-syndromic mental retardation, controls functional maturation of central synapses. *The Journal of Neurophysiology* 105:1506-1515.
47. Nelson ED, Bal M, **Kavalali ET**, Monteggia LM (2011). Selective impact of MeCP2 and associated Histone Deacetylases on the dynamics of evoked excitatory neurotransmission. *The Journal of Neurophysiology* 106:193-201.
48. Autry AE, Adachi M, Nosyreva E, Na ES, Los MF, Cheng PF, **Kavalali ET\***, Monteggia LM\* (2011). NMDA receptor blockade at rest triggers rapid behavioural antidepressant responses. *Nature* 475:91-95 (\*Corresponding Authors).
49. Leitz J, **Kavalali ET** (2011).  $\text{Ca}^{2+}$ -influx slows single synaptic vesicle endocytosis. *The Journal of Neuroscience* 31:16318-16326.
50. Ramirez DMO, Khvotchev M, Trauterman B, **Kavalali ET** (2012). Vti1a identifies a vesicle pool that preferentially recycles at rest and maintains spontaneous neurotransmission. *Neuron* 73:121-134.
51. Na ES, Nelson ED, Adachi M, Autry AE, Mahgoub MA, **Kavalali ET**, Monteggia LM (2012). A mouse model for MeCP2 duplication syndrome: MeCP2 overexpression impairs learning and memory and synaptic transmission. *The Journal of Neuroscience* 32:3109-3117.

52. Raingo J, Khvotchev M, Liu P, Darios F, Li YC, Ramirez DMO, Adachi M, Lemieux P, Toth K, Davletov B, **Kavalali ET** (2012). VAMP4 directs synaptic vesicles to a pool that selectively maintains asynchronous neurotransmission. *Nature Neuroscience* 15:738-745.
53. Akhtar MW, Kim M, Adachi M, Morris MJ, Qi X, Richardson JA, Bassel-Duby R, Olson EN **Kavalali ET**, Monteggia LM (2012). In vivo Analysis of MEF2 Transcription Factors in Synapse Regulation and Neuronal Survival. *PLoS ONE* 7:e34863.
54. Kim M, Akhtar MW, Adachi M, Mahgoub M, Bassel-Duby R, **Kavalali ET**, Olson EN, Monteggia LM (2012). An Essential Role for Histone Deacetylase 4 in Synaptic Plasticity and Memory Formation. *The Journal of Neuroscience* 32:10879-10886.
55. Nosyreva E, Szabla K, Autry AE, Ryazanov AG, Monteggia LM \*, **Kavalali ET\*** (2013). Acute suppression of spontaneous neurotransmission drives synaptic potentiation. *The Journal of Neuroscience* 33:6990-7002 (\*Corresponding Authors).
56. Bal M, Leitz J, Reese AL, Ramirez DMO, Durakoglugil M, Herz J, Monteggia LM, **Kavalali ET** (2013). Reelin mobilizes a VAMP7-dependent synaptic vesicle pool and selectively augments spontaneous neurotransmission. *Neuron*, 80:934-946.
57. Gideons E, **Kavalali ET**, Monteggia LM (2014). Mechanisms underlying differential effectiveness of memantine and ketamine in rapid antidepressant responses. *Proceedings of the National Academy of Sciences of the USA* 111: 8649–8654.
58. Nosyreva E, Autry AE, **Kavalali ET**, Monteggia LM (2014). Age dependence of the rapid antidepressant and synaptic effects of acute NMDA receptor blockade. *Frontiers in Molecular Neuroscience* 7:94.
59. Leitz J, **Kavalali ET** (2014). Fast retrieval and autonomous regulation of single spontaneously recycling synaptic vesicles. *eLife* 10.7554/eLife.03658.
60. Liu Y, Li H, Sugiura Y, Han W, Gallardo G, Khvotchev M, Zhang Y, **Kavalali ET**, Südhof TC, Lin W (2015). Ubiquitin-synaptobrevin fusion protein causes degeneration of presynaptic motor terminals in mice. *The Journal of Neuroscience* 35: 11514-11531.
61. Reese AL, **Kavalali ET** (2015). Spontaneous neurotransmission signals through store-driven Ca<sup>2+</sup> transients to maintain synaptic homeostasis. *eLife* 10.7554/eLife.09262.
62. Nelson BR, Makarewich CA, Anderson DM, Winders BR, Troupes CD, Wu F, Reese AL, McAnally JR, Che X, **Kavalali ET**, Cannon SC, Houser SR, Bassel-Duby R, Olson EN (2016). A peptide encoded by a transcript annotated as long noncoding RNA enhances SERCA activity in muscle. *Science* 351: 271-275.
63. Afuwape OAT, **Kavalali ET** (2016). Imaging synaptic vesicle Exocytosis-Endocytosis with pH sensitive fluorescent proteins. *Methods in Molecular Biology* 1474:187-200.
64. Mahgoub M, Adachi M, Suzuki K, Liu X, **Kavalali ET**, Chahrour MH, Monteggia LM (2016). MeCP2 and Histone Deacetylases 1 and 2 in Dorsal Striatum collectively suppress repetitive behaviors. *Nature Neuroscience* 19:1506-1512.



65. Reese AL, **Kavalali ET** (2016) Single synapse evaluation of the postsynaptic NMDA receptors targeted by evoked and spontaneous neurotransmission. *eLife*. 10.7554/eLife.21170.
66. Afuwape OAT, Wasser C, Schikorski T, **Kavalali ET** (2017) Synaptic vesicle pool specific modification of neurotransmitter release by intravesicular free radical generation. *The Journal of Physiology (Lond.)* 595:1223-1238.
67. Li YC, Chanaday NL, Xu W, **Kavalali ET** (2017) Synaptotagmin-1 and synaptotagmin-7-dependent fusion mechanisms target synaptic vesicles to kinetically distinct endocytic pathways. *Neuron* 93:616-631.
68. Horvath PM, **Kavalali ET**, Monteggia LM (2017) CRISPR/Cas9 system-mediated impairment of synaptobrevin/VAMP function in postmitotic hippocampal neurons. *Journal of Neuroscience Methods* 278:57-64.
69. Crawford DC, Denise M.O. Ramirez DMO, Trauterman B, Monteggia LM, **Kavalali ET** (2017) Selective molecular impairment of spontaneous neurotransmission modulates synaptic efficacy. *Nature Communications* 8:14436.
70. Schaukowitch K, Reese AL, Kim SK, Kilaru G, Joo JY, **Kavalali ET**, Kim TK (2017) An intrinsic transcriptional program underlying synaptic scaling during activity suppression. *Cell Reports* 18:1512-1526.
71. Suzuki K, Nosyreva E, Hunt KW, **Kavalali ET**, Monteggia LM (2017) Effects of a ketamine metabolite on synaptic NMDAR function. *Nature*, 546: E1-E3.
72. Ramirez DMO, Crawford DC, Chanaday NL, Trauterman B, Monteggia LM, **Kavalali ET** (2017) Loss of Doc2-dependent spontaneous neurotransmission augments glutamatergic synaptic strength. *The Journal of Neuroscience* 37:6224-6230.
73. Darios F, Jorgacevski J, Flašker A, Zorec R, García-Martinez V, Villanueva J, Gutiérrez L, Leese C, Bal M, Nosyreva E, **Kavalali ET**, Davletov B (2017). Sphingomimetic multiple sclerosis drug FTY720 activates vesicular synaptobrevin and augments neuroendocrine secretion. *Scientific Reports* 20:5958.
74. Gideons ES, Lin PY, Mahgoub M, **Kavalali ET**, Monteggia LM (2017). Chronic lithium treatment elicits its antimanic effects via BDNF-TrkB dependent synaptic downscaling. *eLife* 6: e25480.
75. Stallings NR, O'Neal MA, Hu J, **Kavalali ET**, Bezprozvanny I, Malter JS (2018). Pin1 regulates A $\beta$ 42-mediated dendritic spine loss. *Science Signaling* 11: eaap8734.
76. Chanaday NL, **Kavalali ET** (2018). Optical detection of three modes of endocytosis at hippocampal synapses. *eLife* 7: e36097.
77. Liu P, Khvotchev M, Li YC, Chanaday NL, **Kavalali ET** (2018). Copine-6 binds to SNAREs and selectively suppresses spontaneous neurotransmission. *The Journal of Neuroscience* 38:5888-5899.
78. Hoerder-Suabedissen A, Korrell KV, Hayashi S, Jeans A, Ramirez DMO, Grant E, Christian HC, **Kavalali ET**, Wilson MC, Molnár Z (2018). Cell-specific loss of SNAP25 from cortical

projection neurons allows normal development but causes subsequent neurodegeneration. *Cerebral Cortex*, [Epub ahead of print].

79. Lin PY, **Kavalali ET**, Monteggia LM (2018). Genetic Dissection of Presynaptic and Postsynaptic BDNF-TrkB signaling in synaptic efficacy of CA3-CA1 synapses. *Cell Reports* 24:1550-1561.
80. Monteggia LM, Lin PY, Adachi M, **Kavalali ET** (2018). Behavioral analysis of SNAP-25 and Synaptobrevin-2 haploinsufficiency in mice. *Neuroscience*, [Epub ahead of print].
81. Hussain S, Fredriksen I, Ringsevjen H, **Kavalali ET**, Davanger S. (2019). Antibodies raised against aldehyde-fixed antigens improve sensitivity for postembedding electron microscopy. *J Neurosci Methods* 317:1-10.

### **Reviews and Commentary**

1. Harata N, Pyle JL, Aravanis AM, Mozhayeva M, **Kavalali ET**, Tsien RW (2001). Limited number of recycling vesicles in small CNS nerve terminals: implications for neural signaling and cell biology of vesicular cycling. *Trends in Neurosciences* 24: 637-643.
2. **Kavalali ET** (2002). SNARE interactions in membrane trafficking: a perspective from mammalian central synapses. *BioEssays* 24: 926-936.
3. **Kavalali ET** (2006). Synaptic vesicle reuse and its implications. *The Neuroscientist* 12: 57-66.
4. Atasoy D, **Kavalali ET** (2006). Presynaptic unsilencing: searching for a mechanism. *Neuron* 50: 345-346.
5. Chung C, **Kavalali ET** (2006). Seeking a function for spontaneous neurotransmission. *Nature Neuroscience* 9: 989-990.
6. **Kavalali ET** (2007). Multiple vesicle recycling pathways in central synapses and their impact on neurotransmission. *The Journal of Physiology (Lond.)* 585: 669-679.
7. Krämer H, **Kavalali ET** (2008). Dynamin-independent synaptic vesicle retrieval? *Nature Neuroscience* 11: 6-8.
8. Wasser C, **Kavalali ET** (2009). Leaky synapses: Regulation of spontaneous neurotransmission in central synapses. *Neuroscience* 158:177-188.
9. Monteggia LM, **Kavalali ET** (2009). Rett Syndrome and the impact of MeCP2 associated transcriptional mechanisms on neurotransmission. *Biological Psychiatry* 65: 204-210.
10. Chung C, **Kavalali ET** (2009). Synaptic Vesicle Endocytosis: Get Two for the Price of One? *Neuron* 61: 333-334.
11. Ramirez DM, **Kavalali ET** (2011). Differential regulation of spontaneous and evoked neurotransmitter release at central synapses. *Curr Opin Neurobiol.* 21:275-282.
12. **Kavalali ET**, Chung C, Khvotchev M, Leitz J, Nosyreva E, Raingo J, Ramirez DM (2011). Spontaneous Neurotransmission: An Independent Pathway for Neuronal Signaling? *Physiology (Bethesda)* 26:45-53.

13. **Kavalali ET**, Nelson ED, Monteggia LM (2011). Role of MeCP2, DNA methylation, and HDACs in regulating synapse function. *J. Neurodevelop. Disord.* 3:250-256.
14. Ramirez DM, **Kavalali ET** (2012). The role of non-canonical SNAREs in synaptic vesicle recycling. *Cellular Logistics* 2:20-27.
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