

CURRICULUM VITAE

PERSONAL DETAILS

Name: Zoltan Nusser
Address: Laboratory of Cellular Neurophysiology, HUN-REN Institute of Experimental Medicine
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EDUCATION AND QUALIFICATIONS

2011 *Member of the Academia Europaea*
2007 *Member of the Hungarian Academy of Sciences*
2002 *Hungarian Academy of Sciences*
Degree: Doctor of Science (**D.Sc.**)
1992-95 *Oxford University, Hertford College, UK*
Degree: Doctor of Philosophy (**D.Phil.**)
1987-92 *University of Veterinary Science, Budapest*
Degree: Doctor of Veterinary Medicine (**D.V.M.**)

PROFESSIONAL EXPERIENCE

2024-08-13 Deputy Director, Institute of Experimental Medicine
2020-2024 Director, Institute of Experimental Medicine
2000- Head of the Laboratory of Cellular Neurophysiology at the Institute of Experimental Medicine,
1998-2000 Wellcome Travelling Research Fellow in the laboratory of Prof. I. Mody at the University of California, Los Angeles
1996 Visiting scientist in the Department of Pharmacology, University College London
Collaborators: Prof. S.G. Cull-Candy and Prof. M. Farrant
1995-98 Postdoctoral scientist in the MRC Anatomical Neuropharmacology Unit, Oxford
Supervisor: Prof. P. Somogyi

ACHIEVEMENTS

Prizes:

2013 Bólyai Prize, Hungary
2012 Széchenyi Prize, Hungary
2007 Debiopharm Life Sciences Award from the Swiss Federal Inst. of Technology in Lausanne
2006 FENS/Boehringer Award from the Federation of European Neuroscience Societies
2006 'Akadémiai Prize' from the Hungarian Academy of Sciences, Hungary
2004 Ignaz L. Lieben Prize of the Austrian Academy of Sciences, Austria
2002 'Talentum Prize' from the Central European Talent Support Foundation, Hungary
2001 Krieg Cortical Kudos Cortical Explorer Award of the Cajal Club, USA
2000 Boehringer Ingelheim Fond's Research Award for Postdoctoral Fellows, Germany
2000 The Chancellors Award for Postdoctoral Research. An award for the best postdoctoral researcher at UCLA, USA
1998 Wellcome Prize Travelling Research Fellowship from the Wellcome Trust, UK
1996 Glaxo-Wellcome Prize Award. A prize for the best Ph.D. thesis in the UK provided by the Brain Research Association of Britain
1993/94 Overseas Research Students Awards. University of Oxford, UK

Fellowships and grants:

2018-2023 European Research Council Advanced Grant. (2.5 million EUR)
2018-2022 National Brain Research Program Grant (350 kEUR)
2012-2017 Lendület Fellowship of the Hungarian Academy of Sciences (0.8 million EUR)
2012-2017 European Research Council Advanced Grant (2.5 million EUR)
2010-2012 Wellcome Trust Project Grant (326 K EUR)
2010-2012 NKTH-ANR Hungarian-French collaborative grant with Drs Acsády, Ulbert, Diana and Paoletti (my lab receives 140 K EUR).
2008-2011 Wellcome Trust Equipment Grant (399 K EUR)
2006-2011 European Young Investigator Award from the European Science Foundation (986 K EUR)
2005-2009 European Commission Integrated FP6 project grant (my lab receives 230 K EUR)
2006-2008 Wellcome Trust Project grant
2003-2006 International Senior Research Fellowship from the Wellcome Trust (\$1180K)

2000-2006	Boehringer Ingelheim Fond's Research Award for Postdoctoral Fellows (236 K EUR)
2001-2005	International Research Scholarship from the Howard Hughes Medical Institute (\$375K)
2000-2003	Collaborative Research Initiative Grant from the Wellcome Trust (my lab received \$160K)

SELECTED PUBLICATIONS

1. Aldahabi, M., Neher, E., and **Nusser, Z.** (2024). Different states of synaptic vesicle priming explain target cell type-dependent differences in neurotransmitter release. **PNAS**, *121*, e2322550121.
2. Aldahabi, M., Balint, F., Holderith, N., Lorincz, A., Reva, M., and **Nusser, Z.** (2022) Different priming states of synaptic vesicles underlie distinct release probabilities at hippocampal excitatory synapses, **Neuron**, *110*, 4144-4161
3. Rebola, N., Reva, M., Kirizis, T., Szoboszlay, M., Lorincz, A., Moneron, G., **Nusser, Z.** and DiGregorio, D.A. (2019) Distinct nanoscale calcium channel and synaptic vesicle topographies contribute to the diversity of synaptic function. **Neuron**, *104*, 693-710.
4. Éltés, T., Kirizis, T., **Nusser, Z.** Holderith, N. (2017) Target cell type-dependent differences in Ca²⁺ channel function underlie distinct release probabilities at hippocampal glutamatergic terminals. **J Neurosci**, *37*, 1910-1924.
5. Szoboszlay M., Lorincz, A., Lanore, F., Vervaeke, K., Silver, R. A. & **Nusser, Z.** (2016) Functional properties of dendritic gap junctions in cerebellar Golgi cells. **Neuron**, *90*, 1043-1056.
6. Lenkey, N., Kirizis, T., Holderith, N., Mate, Z., Szabo, G., Vizi, E. S., Hajos, N. & **Nusser, Z.** (2015) Tonic endocannabinoid-mediated modulation of GABA release is independent of the CB1 content of axon terminals. **Nature Comm**, *20*, 6557-60.
7. Kerti-Szigeti, K., **Nusser, Z.** & Eyre, M.D. (2014) Synaptic GABA_A receptor clustering without the $\gamma 2$ subunit. **J Neurosci**, *34*, 10219-10233.
8. Holderith, N., Lorincz, A., Katona, G., Rózsa, B., Kulik, A., Watanabe, M. & **Nusser, Z.** (2012), Release probability of hippocampal glutamatergic terminals scales with the size of the active zone, **Nature Neurosci**, *15*, 988-997.
9. Eyre, M.D., Renzi, M., Farrant, M. & **Nusser, Z.** (2012) Setting the time course of inhibitory synaptic currents by mixing multiple GABA_A α subunit isoforms. **J Neurosci**, *32*, 5853-5867.
10. Vervaeke, K., Lorincz, A., **Nusser, Z.** & Silver, R. A (2012) Gap Junctions compensate for sub-linear dendritic integration in an inhibitory network. **Science**, *335*, 1624-1628.
11. Lorincz, A. & **Nusser, Z.** (2010) Molecular identity of dendritic voltage-gated sodium channels. **Science**, *328*, 906-909.
12. **Nusser, Z.** (2009) Variability in the subcellular distribution of ion channels increases neuronal diversity. **Trends in Neurosci**, *32*, 267-274.
13. Lorincz, A. & **Nusser, Z.** (2008) Cell type-dependent molecular composition of the axon initial segment. **J Neurosci** *28*, 14329-14340.
14. Lorincz, A. & **Nusser, Z.** (2008) Specificity of immunoreactions: the importance of testing specificity in each method. **J Neurosci** *28*, 9083-9086.
15. Eyre, M.D., Antal M. & **Nusser, Z.** (2008) Distinct deep short-axon cell subtypes of the main olfactory bulb provide novel intrabulbar and extrabulbar GABAergic connections. **J Neurosci** *28*, 8217-8229.
16. Kollo, M, Holderith, N. B. & **Nusser, Z.** (2006) Novel subcellular distribution pattern of A-type K⁺ channels on neuronal surface **J Neurosci**, *26*, 2684-2691.
17. Biro, A. A., Holderith, N.B. & **Nusser, Z.** (2006) Release probability-dependent scaling of the postsynaptic responses at single hippocampal GABAergic synapses. **J Neurosci** *26*, 12487-12496.
18. Biro, A. A., Holderith, N. B. & **Nusser, Z.** (2005) Quantal size is independent of the release probability at hippocampal excitatory synapses. **J Neurosci**, *25*, 223-232.
19. Farrant, M., & **Nusser, Z.** (2005) Variations on an inhibitory theme: phasic and tonic activation of GABA_A receptors, **Nature Reviews Neurosci**, *6*, 215-229.
20. Losonczy, A., Biro, A. A., & **Nusser, Z.** (2004) Persistently active cannabinoid receptors mute a sub-population of hippocampal interneurons. **Proc Natl Acad Sci USA**, *101*, 1362-1367.
21. Lőrincz, A., Notomi, T., Tamás, G., Shigemoto, R. & **Nusser, Z.** (2002) Polarized and compartment-dependent distribution of the hyperpolarization-activated channel HCN1 in pyramidal cell dendrites. **Nature Neurosci**, *5*, 1185-1193.
22. **Nusser, Z.**, Lujan, R., Laube, G., Roberts, J. D. B., Molnar, E. & Somogyi, P. (1998) Cell type and pathway dependence of synaptic AMPA receptor number and variability in the hippocampus. **Neuron**, *21*, 545-559.
23. **Nusser, Z.**, Hajos, N., Somogyi, P. & Mody, I. (1998) Increased number of synaptic GABA_A receptors underlies potentiation at hippocampal inhibitory synapses. **Nature**, *395*, 172-177.

24. **Nusser, Z.**, Sieghart, W. & Somogyi, P. (1998) Segregation of different GABA_A receptors to synaptic and extrasynaptic membranes of cerebellar granule cells. **J Neurosci**, *18*, 1693-1703.
25. **Nusser, Z.**, Cull-Candy, S. G. & Farrant, M. (1997) Differences in synaptic GABA_A receptor number underlie variation in GABA mini amplitude. **Neuron**, *19*, 697-709.