# András Szőnyi, MD, PhD

## Education:

2014: MD; Faculty of Medicine, Semmelweis University, Budapest
2018: PhD; János Szentágothai Doctoral School of Neurosciences, School of PhD studies, Semmelweis University, Budapest

## Present affiliations:

Laboratory of Cellular Neurophysiology, Department of Cellular and Network Neurobiology, Institute of Experimental Medicine, Budapest, Hungary
Principal Investigator: Zoltan Nusser, DSc

Laboratory for Cellular Mechanisms of Learning and Memory, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland
Principal Investigator: Andreas Lüthi, PhD

**Date of birth:** January 26, 1989
**E-mail:** szonyi@koki.hu
**Tel.:** +36-30-514-4298

## Former affiliation:

August 21, 2006 – May 31, 2019:
Laboratory of Cerebral Cortex Research, Department of Cellular and Network Neurobiology, Institute of Experimental Medicine, Budapest
Principal Investigator, group leader: Tamas F. Freund, DSc
Workgroup leader, Ph.D. supervisor: Gabor Nyiri, PhD

## Awards:

- 2021-2022: EMBO Long Term Postdoctoral Fellowship
- 2020: Prize for Young Investigators of the Hungarian Academy of Sciences
- 2019: Junior Prima Prize in Sciences, Hungarian Development Bank
- 2019: Eppendorf and Science Prize for Neurobiology, finalist
- 2017: New National Excellence Program, Ministry of Human Resources, The State of Hungary
- 2016: National Talent Program, Ministry of Human Resources, The State of Hungary
- 2015: Students' Scientific Association Excellence Prize, Semmelweis University
- 2013: Eötvös Loránd Studentship of the National Excellence Program, The State of Hungary
- 2013: National Scientific Report Award - 3rd prize, University of Sciences of Szeged
- 2012: Scientific Report Award - 1st prize, Semmelweis University
- 2012: Scholarship of the Hungarian Republic of the academic year 2012/2013
- 2011: Scholarship of the Hungarian Republic of the academic year 2011/2012
- 2011: National Scientific Report Award - 3rd prize, University of Debrecen
- 2010: Scientific Report Award - 1st prize, Semmelweis University

## Poster presentations:

- 2018: Brainstem nucleus incertus controls contextual memory formation, FENS, 7-11 July, Berlin, Germany
- 2017: New aspect of the glutamatergic nature and projection patterns of the median raphe cells in the mouse, Conference of the Japanese Neuroscience Society, 20-23 July, Chiba, Tokyo, Japan
- 2016: The ascending projections from the median raphe region are mainly glutamatergic in the mouse forebrain, SfN, 12-16 November, San Diego, USA
- 2016: Cellular architecture and transmitter phenotypes of neurons of the mouse median raphe region, SfN, 12-16 November, San Diego, USA
- 2016: New aspect of the glutamatergic nature and projection patterns of the median raphe cells in the mouse, FENS, 2-6 July, Copenhagen, Denmark
- 2014: Synapses established by the median raphe contain glutamate receptors in the mouse forebrain, IBRO International Workshop, 16-17 January, Debrecen, Hungary
- 2012: Proportions and ultrastructural properties of hippocampal perisomatic terminals, IBRO International Workshop, 19-21 January, Szeged, Hungary
- 2010: Nitric oxide signaling at hippocampal cholecystokinin-positive basket cell synapses, IBRO International Workshop, 21-23 January, Pécs, Hungary

## Lectures:

- 2016: Nucleus incertus inhibits hippocampal somatostatin-positive interneurons, Hungarian Neuroscience Doctoral Conference, 20 January, Budapest, Hungary
- 2013: Glutamate receptors in serotonergic raphe-hippocampal synapses, Conference of the Hungarian Society for Microscopy, 23-25 May, Siófok, Hungary

## Courses:

2015: Synaptic Plasticity and Neural Circuit Remodeling Course, Neuroscience School of Advanced Studies, 30 May - 6 Jun, Florence, Italy

## Patents:

International Patent Classification: A61K 31/47 (2006.01); A61P 25/00 (2006.01); International Application Number: PCT/HU2011/000062

## List of publications:

- **Median raphe controls acquisition of negative experience in the mouse**
  András Szőnyi*, Krisztián Zichó*, Albert M. Barth, Roland T. Gönczi, Dániel Schlingloff, Bibiána Török, Eszter Sipos, Abel Major, Zsuzsanna Bardoczi, Katalin E. Sos, Attila I. Gulyás, Viktor Varga, Dóra Zelena, Tamás F. Freund, Gábor Nyiri;
  Science, 2019 Nov 29;366(6469). pii: eaay8746. doi: 10.1126/science.aay8746.
  *equal contribution

- **Conducting memory formation** (essay)
  András Szőnyi
  Science, 2019 Oct 4;366(6461):46. doi: 10.1126/science.aaz3883.

- **Brainstem nucleus incertus controls contextual memory formation**
  András Szőnyi, Katalin E. Sos, Rita Nyilas, Dániel Schlingloff, Andor Domonkos, Virág T. Takács, Balázs Pósfai, Panna Hegedüs, James B. Priestley, Andrew L. Gundlach, Attila I. Gulyás, Viktor Varga, Attila Losonczy, Tamás F. Freund, Gábor Nyiri;
  Science, 2019 May 24;364(6442). pii: eaaw0445. doi: 10.1126/science.aaw0445.

- **Co-transmission of acetylcholine and GABA regulates hippocampal states**
  Virág T. Takács, Csaba Cserép, Dániel Schlingloff, Balázs Pósfai, András Szőnyi, Katalin E. Sos, Zsuzsanna Környei, Ádám Dénes, Attila I. Gulyás, Tamás F. Freund, Gábor Nyiri;
  Nature Communications, 2018 Jul 20;9(1):2848. doi: 10.1038/s41467-018-05136-1.

- **Cellular architecture and transmitter phenotypes of neurons of the mouse median raphe region**
  Katalin E. Sos, Marton I. Mayer, Csaba Cserep, Flora S. Takacs, András Szőnyi, Tamás F. Freund, Gábor Nyiri;
  Brain Structure and Function, 2017 Jan;222(1):287-299. doi: 10.1007/s00429-016-1217-x.

- **The ascending median raphe projections are mainly glutamatergic in the mouse forebrain**
  András Szőnyi, Márton I. Mayer, Csaba Cserép, Virág T. Takács, Masahiko Watanabe, Tamás F. Freund, Gabor Nyiri;
  Brain Structure and Function, 2016 Mar;221(2):735-51. doi: 10.1007/s00429-014-0935-1.

- **Quantitative ultrastructural analysis of basket and axo-axonic cell terminals in the mouse hippocampus**
  Virág T. Takács, András Szőnyi, Tamás F. Freund, Gabor Nyiri , Attila I. Gulyás;
  Brain Structure and Function, 2015 Mar;220(2):919-40. doi: 10.1007/s00429-013-0692-6.

- **NMDA receptors in GABAergic synapses during postnatal development**
  Csaba Cserép, Eszter Szabadits, András Szőnyi, Masahiko Watanabe, Tamás F. Freund, Gábor Nyiri;
  PLoS One, 2012; 7(5):e37753. doi: 10.1371/journal.pone.0037753.

- **NMDA receptors in hippocampal GABAergic synapses and their role in nitric oxide signaling**
  Eszter Szabadits, Csaba Cserép**,** András Szőnyi, Yuko Fukazawa, Ryuichi Shigemoto, Masahiko Watanabe, Shigeyoshi Itohara, Tamás F. Freund, Gábor Nyiri;
  Journal of Neuroscience, 2011 Apr 20;31(16):5893-904. doi: 10.1523/JNEUROSCI.5938-10.2011.

- **Nitric oxide signaling modulates synaptic transmission during early postnatal development**
  Csaba Cserép, András Szőnyi, Judit Veres, Beáta Németh, Eszter Szabadits, Jan de Vente, Norbert Hájos, Tamás F. Freund, Gábor Nyiri;
  Cerebral Cortex, 2011 Sep;21(9):2065-74. doi: 10.1093/cercor/bhq281.

- **Neuroprotective effects of a novel kynurenic acid analogue in a transgenic mouse model of Huntington's disease**
  Dénes Zádori, Gábor Nyiri, András Szőnyi, István Szatmári, Ferenc Fülöp, József Toldi, Tamás F. Freund, László Vécsei, Péter Klivényi;
  Journal of Neural Transmission, 2011 Jun;118(6):865-75. doi: 10.1007/s00702-010-0573-6.