Curriculum vitae

Tibor Harkany
University Professor and Chair
Department of Molecular Neurosciences, Center for Brain Research
Medical University of Vienna, Austria
Telephone: +43 1 40160 34050, *Fax*: +43 1 40160 934053, *e-mail*: Tibor.Harkany@meduniwien.ac.at
&
Professor of Neurobiology
Section for Chemical Neurostransmission
Department of Neuroscience, Biomedicum 7D
Karolinska Institutet, Stockholm Sweden
Telephone: +46 8 524 87070/87656, *e-mail*: Tibor.Harkany@ki.se

Date of Birth:	20 June, 1972
Citizenship:	Hungarian
Marital Status:	Single parent
Children:	Tamás Tibor (2000), Léna Anna (2004), Hanna Sophia (2009) & Milan Dominik (2013)

Current & former positions

2020-present: Member of the steering board, Medical Neuroscience Cluster, Medical University of Vienna.

2019-2020: Speaker (theoretical disciplines), Medical Neuroscience Cluster, Medical University of Vienna.

2013-present: University Professor and Head of the Department of Molecular Neurosciences, Center for Brain Research, Medical University of Vienna.

Inaugural lecture: 'From discovery research towards drug legislation: A tale of endocannabinoids and cannabis' on 20.10.2014.

2011-present: Professor of Neurobiology, Department of Neuroscience, Karolinska Institutet (20% since July 1, 2016).

2014-2015: Team leader, European Neuroscience Institute Vienna – a member of the European Neuroscience Institute Network (ENI-Net).

2007-2013: SULSA professor and Sixth Century chair in cell biology, University of Aberdeen, United Kingdom (adjunct 01.10.2011- 31.10.2013).

Inaugural lecture: 'Wiring and firing neuronal networks: endocannabinoids take center stage'; 3.11.2008.

2009-2010: Team leader, European Neuroscience Institute at Aberdeen – a member of the European Neuroscience Institute Network (ENI-Net).

2009-2010: Senior scientist, Karolinska Institutet (part time).

2005-2008: Associate professor (docent), Karolinska Institutet.

2004-2005: Assistant professor (Forskarassistent), Swedish Medical Research Council.

2002-2004: Post-doctoral fellow, Department of Medical Biochemistry and Biophysics, Karolinska Institutet.

2001-2003: Research associate, Department of Medical Chemistry, University of Szeged, Hungary.

1999-2001: Post-doctoral fellow, Department of Animal Physiology, University of Groningen, NL.

1998-2000: Scientific advisor, Béres Co. Ltd., Budapest, Hungary.

Education, academic degrees

2005: Docent in Neuropharmacology (Dnr. 3664/2005, '*habilitation equivalent*'), Karolinska Institutet.

1999: PhD in Medical Sciences *(summa cum laude)*. Semmelweis Medical School, Budapest, Hungary (No. 249). ['β-Amyloid-induced brain injury: Evidence for Ca^{2+} and free radical-mediated neurotoxic cascade mechanisms'; advisor: Csaba Nyakas].

1995: M.Sc. as biologist specialized in molecular biological and biotechnological sciences (No. 291/1995), József Attila University, Szeged, Hungary.

Awards & honors

- ERC Proof of Concept Award (2022).
- Coordinator, "*Excellent = Austria*" Neuroscience Center of Excellence proposal (2022, C2 by FWF).
- ERC Advanced Grant Award (2021).
- CINP Sumitomo/Sunovion Brain Health Basic Research Award (2020).
- Section chair, A3 Physiology & Neuroscience, Academy of Europe (2020-2021).
- Member, Professional Council, International Association for Cannabinoid Medicines (2019).
- Elsevier Distinguished Lecture Award, Developmental Neurotoxicology Society, US (2018).
- Member, Rotary Club Vienna (2018-2021).
- Member, DANA Alliance for Brain Initiatives (2017).
- Member, Academia Europaea (2016).
- ERC Advanced Grant Award (2016).
- Eric K. Fernström Prize for young researchers (Stockholm/Lund; 2013).
- 'IACM Award 2013' for young researchers (by the International Association for Cannabinoid Medicines; 2013).
- Anders Jahre medical prize for young researchers (University of Oslo); shared with K. Pietras (Lund University; 2012).

- Elected Fellow (FRSB), Royal Society for Biology, United Kingdom (2010).
- Elected Member of the Society of Hungarian Scientists and Scholars; Hungarian Academy of Sciences, Budapest, Hungary (2009).
- Senior researcher award, Karolinska Institutet (2008).
- Graduate studentship award, Integrative Toxicology Training Partnership, Medical Research Council - Toxicology Unit, UK (2008).
- Member, European Molecular Biology Organization (EMBO), Young Investigator Programme (2007).
- Reader, Scottish Universities Life Science Alliance (SULSA), Cell Biology Directorate (2007).
- Post-doctoral fellowship ('Cell replacement strategies in neurodegenerative disorders'), Karolinska Institutet (2002-2004).
- Short-term fellowship of the International Soros Foundation (1998).
- Short-term fellowship of the Eötvös Foundation, Hungarian Scholarship Board (1998).
- 'Ph.D. thesis support' from the Hungarian Credit Bank (MHB/ABN AMRO; 1996-1997).
- 'Outstanding Young Biologist', Scholarship of Varga Béla Foundation (Hungary; 1993-1995).
- Hungarian State Scholarship (1993-1995).

Studies sponsored by international foundations

1998: International Soros Foundation fellowship (Department of Animal Physiology, University of Groningen).

1997: Fulbright fellowship (Laboratory on Aging and Neurodegenerative Disorders, Deaconess Hospital, Harvard Medical School, Boston, USA, *declined*).

1997: Hungarian Scholarship Board/Netherlands Organization for International Co-operation in Higher Education (NUFFIC) (Department of Animal Physiology, University of Groningen).

1996-1997: Eötvös Foundation, Hungarian Scholarship Board (Department of Animal Physiology, University of Groningen).

1995: European Neuroscience Mobility Programme Grant, European Science Foundation (Pharmacology Department, National University of Ireland, Galway, Republic of Ireland).

1994-1996: NWO-HSF fellow (Department of Animal Physiology, University of Groningen).

1993-1994: TEMPUS exchange fellow (Department of Animal Physiology, University of Groningen).

Special training, leadership & qualifications

2020: Schulung Datenschutz und Informations-sicherheit (Medical University of Vienna).

2016, 2017: Team management and team building (with Ms. Renate Steinacher, Stonemotion G.m.b.H.).

2008-2010: Coaching and leadership training: personal training with Ms. Lizzie Holden, The Global Coach House (London, UK).

2008: EMBO Laboratory Management Course: The Art of Leadership. EMBO/Metis Leadership.

1997: Planning, Processing, Control and Validation of Clinical Pharmacological Trials in Accordance with Good Clinical Practice (GCP)-ICH Guidelines, (Association of Hungarian Pharmaceutical Companies [MAGYOSZ]).

Memberships

- Austrian Neuroscience Association (ANA; 2014-)
- Swedish Physiological Society (2014-)
- British Toxicology Society (2008-2010)
- British Neuroscience Association (2007-2011)
- Society for Neuroscience (1998-)
- Hungarian Society of Neuropathology (1997-)
- Federation of European Neuroscience Societies (FENS), Hungarian Neuroscience Society (1995-)
- Alzheimer's disease Section, Society of Hungarian Neurologists and Psychiatrists (1993)

Commission of trust

2009-present: *Interviewer and evaluator*, EMBO long-term and short-term fellowship (>25 grants), on-going.

2023-2027: *Member*, International Scientific Advisory Board, Institute of Experimental medicine, Hungarian Academy of Sciences.

2023: *Evaluator*, CEECInd 6th ED, Basic and Clinical Medicine, Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (25 applications).

2023: *Panelist*, "TalentStars" funding award, University of Padua, Italy (9 grants, stage 1 and stage 2).

2023: *Panelist* for the Neuroscience Board, Hungarian National Research Council (FKTH), Budapest, Hungary (11 proposals).

2023: ERC (CoG), *remote evaluator* (1 proposal).

2023: *Evaluator*, 'la Caixa Foundation', incoming and retaining fellowships, (Barcelona, Spain; 40 applications).

2022: ERC (AdG), *remote evaluator* (2 proposals).

2022: *Panelist* for the Neuroscience Board, Hungarian National Research Council (FKTH), Budapest, Hungary (11 proposals).

2022: *Evaluator*, Neuroscience Panel, 2022 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (26 applications).

2022: *Evaluator*, 'la Caixa Foundation', Junior Leader fellowships, (Barcelona, Spain; 19 applications).

2021: *Panelist*, "TalentStars" funding award, University of Padua, Italy (29 interview, stage 1 and stage 2 grants).

2021: *Evaluator*, Hellenic Foundation for Research and Innovation (Nea Smirni, Greece; 1 application).

2021-2022: *Member of the Education Committee*, The International College of Psychopharmacology (CINP).

2021: *Chair of the Neuroscience Panel*, 2021 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (100 applications).

2020: *Remote evaluator*, Grant Program, Sapienza University, Rome, Italy (1 application).

2020: *Remote evaluator*, Swiss National Science Foundation, Switzerland (1 application).

2020: *Evaluator*, 'la Caixa Foundation', Junior Group Leader – Incoming program, (Barcelona, Spain; 46 applications).

2020: *Chair of the Neuroscience Panel*, 2020 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (107 applications).

2020: *Panelist* for the Neuroscience Board, Hungarian National Research Council (FKTH), Budapest, Hungary (7 proposals).

2019-2021: *Member*, International Scientific Advisory Board, University of Pecs, Hungary

2019: *Panelist* for the 'Stimulus of Scientific Employment, Individual Support - 2018 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (23 proposals).

2019: *Panelist* for the Neuroscience Board, Hungarian National Research Council (OTKA), Budapest, Hungary (7 proposals).

2019: *Evaluator*, InPhiNIT Fellowship program, 'la Caixa Foundation', Barcelona, Spain (46 applications).

2018: *Panelist* for the 'Stimulus of Scientific Employment, Individual Support - 2017 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (26 proposals).

2018: *Remote evaluator*, Fonds National de la Recherche Luxembourg (1 proposal).

2018: *Panelist* for the Neuroscience Board, Hungarian National Research Council (OTKA), Budapest, Hungary (5 proposals).

2018: *Remote evaluator*, ERC Synergy grants (1 proposal).

2017-2018: *Remote evaluator*, PRIN, Italian Ministry of Italian Ministry for Education, University and Research (3 proposals).

2017: *Member of the international research evaluation committee*, Chemistry, Ecology and Life Sciences (CEL) of the University of Amsterdam and VU University Amsterdam.

2017: *Chair of the Neuroscience Panel*, 2017 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (102 proposals).

2017: *Remote reviewer*, Frontline Research Grants, NFKI, Hungary.

2017: *Panelist* for the Neuroscience Board, Hungarian National Research Council (OTKA), Budapest, Hungary (6 proposals).

2017: *Evaluator and board member*, InPhiNIT Fellowship program, 'la Caixa Foundation', Barcelona, Spain (32 applications).

2017: *Remote evaluator*, ERC consolidator grants (3 proposals).

2016: *Invited Panelist* for the H2020 call 'Health, Demographic Change and Well-being'.

2016: *Remote evaluator*, Netherlands Organisation for Scientific Research (NWO), Vici scheme (1 application).

2015: *Panelist* for the Life & Health Sciences 2015 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (30 grant proposals).

2015: *Panelist* for the Neuroscience Board, Hungarian National Research Council (OTKA), Budapest, Hungary (6 proposals).

2014: *Mid-term review committee member*, Swammerdam Institue for Life Sciences (SILS), University of Amsterdam.

2014: *Peer review evaluator* for Horizon2020 (advanced ERC grants and health call).

2013: *Review board member*, "EU Joint Programme – Neurodegenerative Disease Research" (JPND).

2012-2013: P*eer review evaluator* for FP7 "Ideas" work programme (advanced ERC grants).

2012: *Panelist* for the Life & Health Sciences 2012 Call of Fundação para a Ciência e a Tecnologia (FCT), Lisboa, Portugal (46 grant proposals).

2012-: KID *funding panel member* of the Karolinska Institutet (2 funding deadlines/year).

2012: *Reviewer*, Karolinska Institutet-NIH Training Program in Neuroscience.

2008: *Review board member* of Era-Net NEURON/neurodegenerative diseases for the European Commission (2008).

Consultancy

2020: Bionorica SE; Neumarkt, Germany.

External research grants

2024-2027: Swedish Research Council, principal investigator.

2024-2026: Novo Nordisk Foundation (Denmark), Nordic endocrinology and metabolism program, principal investigator.

2022: ERC Proof of Concept (with R. Schnell) principal investigator.

2022: EMBO grant support for Ukrainian Scientists in Need, host laboratory.

2022-2023: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2021: WWTF grant preparatory awards 1 & 2, Austria, coordinator.

2021: Intramural grant, Medical Neuroscience Cluster, Medical University of Vienna, Austria, coordinator.

2022-2026: European Research Council (ERC, 2021 cycle), Advanced grant, principal investigator.

2020-2023: Novo Nordisk Foundation (Denmark), Nordic endocrinology and metabolism program, principal investigator.

2020: ERC Proof of Concept (with R. Schnell; "favourable evaluation, on reserve list"), principal investigator.

2020-2022: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2019-2020: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2019-2023: Swedish Medical Research Council (Vetenskapsrådet), principal investigator.

2017-2019: Novo Nordisk Foundation (Denmark), Nordic endocrinology and metabolism program, principal investigator.

2017-2019: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2017: Symposium support, StratNEURO, Karolinska Institutet, co-organizer (with T. Hökfelt).

2016-2021: European Research Council (ERC, 2015 cycle), Advanced grant, principal investigator.

2016: GW Pharmaceuticals, Histon/Cambridge, United Kingdom, principal investigator.

2016: Symposium support, StratNEURO, Karolinska Institutet, co-organizer (with O. Kiehn, T. Hökfelt & P. Uhlen).

2015-2016: Novo Nordisk Foundation (Denmark), Nordic endocrinology and metabolism program, principal investigator.

2015-2016: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2015: GW Pharmaceuticals, Histon/Cambridge, United Kingdom, principal investigator.

2014-2017: European Union 7th Framework programme, PAINCAGE integrated project, #603191, work package leader.

2014: Novo Nordisk Foundation (Denmark; competitive renewal), principal investigator.

2014-2018: Swedish Medical Research Council (Vetenskapsrådet), principal investigator

2013-2014: Petrus & Augusta Hedlunds Foundation (Sweden), co-principal investigator.

2013: Novo Nordisk Foundation (Denmark; competitive renewal), principal investigator.

2013: Part-financed studentship (KID-medel), principal investigator (co-PIs: T. Hökfelt, K. Meletis), Karolinska Institutet.

2012: Novo Nordisk Foundation (Denmark), principal investigator.

2012: Part-financed studentship (KID-medel), principal investigator (co-PIs: T. Hökfelt, J. Mulder), Karolinska Institutet.

2012-2014: Hjärnfonden (Swedish Brain Research Foundation), principal investigator.

2007-2012: Karolinska Fonder (internal, on multiple occasions), principal investigator.

2011-2013: Swedish Medical Research Council (Vetenskapsrådet), principal investigator.

2009: Alzheimer's Research Trust UK, principal investigator.

2008-2012: MRC-ITTP training program grant (UK), principal investigator.

2008-2013: Scottish Universities Life Science Alliance (UK), principal investigator.

2008-2013: National Institutes of Health, co-principal investigator (DA023214, RO1).

2008-2013: European Union 7th Framework programme, HEALTH-F2-2007-201159, work package leader.

2008-2010: EMBO Young Investigator Programme fellowship support, principal investigator.

2008-2010: Swedish Medical Research Council, principal investigator.

2008: Alzheimer's Research Trust UK, co-applicant (Pilot grant 2008A).

2007: Graduate studentship (principal investigator, co-PI: AJ Irving, Dundee), Scottish Universities Life Science Alliance (SULSA).

2007-2010: Alzheimer's Research Trust UK, principal supervisor/sponsor.

2007-2010: Alzheimer's Association, co-principal investigator (IIRG-06-27124).

2007: Åhlens Stiftelse, principal investigator.

2006–2007: Center of Excellence in Developmental Biology, Karolinska Institutet, independent group-leader start-up grant.

2006: Stiftelsen Ragnhild och Einar Lundströms Minne, principal investigator.

2006: Anders Otto Swärds Stiftelse/Ulrika Eklunds Stiftelse, principal investigator.

2005–2006: Åke Wiberg Foundation (#634702931), principal investigator.

2004–2007: Swedish Medical Research Council, principal investigator.

2004: Hans och Loo Ostermans Foundation, principal investigator.

2004: Gun och Bertil Stohnes Stiftelse, principal investigator.

2003: Hans och Loo Ostermans Foundation, principal investigator.

2002–2003: Deutsche Forschungsgemeinschaft (DFG, Ha 2211/2-1), collaborator.

2002–2003: Hersenstichting Nederlands (NL), principal investigator:

2001–2005: Hungarian National Science Foundation, young investigator research grant (#F035254), principal investigator.

1997–2000: Hungarian National Science Foundation, young investigator research grant (#F023865), principal investigator.

1998: Hungarian Health Sciences Council (No. 30/1998), principal investigator.

Formal collaborations, bilateral funding

2017-: Ass. Prof. Florian Gruber, 'Brain-Skin Collaboration', Department of Dermatology, Medical University of Vienna.

2017-2020: Professor Gert Lubec, Paracelsus University, Salzburg, Austria.

Invitations & symposium organization

2024

- *Nobel conference on glial cell biology*, Karolinska Institutet, Stockholm, invited speaker, 10-11.06.2024.
- *ECNP meeting*, invited speaker, Milan 21-24.09.2024.

2023

- Rudolf Magnus Seminar Series, keynote lecture, Utrecht, Netherlands 26.06.2023.

2022

- Invited lecture at ENEA 2022 Lyon, France (replaced by M. Benevento, postdoctoral fellow).
- Invited lecture at the International Congress of Neuroendocrinology, Glasgow, UK.
- Neuropeptides: the diverse dialects of the nervous system, Nobel Symposium (co-organizer with T. Hökfelt, D. Anderson, C. Broberger and E. Hedlund).

- ECNP Workshop on Neuropsychopharmacology for Early Career Scientists in Europe, 17-20.03.2022, Nice, France, invited lecturer.
- Member of the Programme Committee, Hungarian Neuroscience Meeting (MITT/IBRO workshop, 27-28.01.2022, Budapest, Hungary).

2021

- ÖGPB, 23rd Annual Congress, 18-19.11.2021, Austria, virtual meeting, plenary lecture

2020

- Brain Development Research Consortium, National Institutes of Drug Abuse (NIDA, 10/12/2020), invited webinar
- Symposium "Cannabis in a Changing Brain", UCI Center for the Study of Cannabis, University of California at Irvine, CA USA (organizer: D. Piomelli; 16/09, >1,000 viewers). https://vimeo.com/439000149, invited speaker

2019

- University of Leipzig, Paul Flechsig Institute for Brain Research, invited lecture (19/11; host: W Härtig).
- Austrian Neuroscience Association (ANA/APHAR) meeting, 'The mammalian hypothalamus: cellular diversity for functional multiplicity'minisymposium, organizer (25/09; speakers: S Korchynska, B Kofler, DD Pollak).
- Gordon Research Conference "*Cannabinoid Functions in the CNS*", discussion leader.
- 'HKIAS Symposium on Advances in Neuroscience', Institute for Advanced Study, City University of Hong Kong, invited lecture 'Molecular interrogation of neuronal identity and wiring in the hypothalamic stress circuitry' (24-26/03; hosts: C Blakemore, T Hökfelt, J He).

2018

- Congress of the European Neuroendocrine Association, Wroclaw, Poland (17/10-20/10), plenary lecture "Diversity of hypothalamic neurons".
- Elsevier Distinguished Lecture, 42nd Annual Meeting of the Developmental Neurotoxicology Society (23/06-27/06), Clearwater beach, FL, USA (host: D. Dow-Edwards).
- 31st CINP World Congress, Vienna Austria (16/06-19/06), plenary lecture.
- 'Cannabis shapes the morophologfical and epigenetic trajectory of mesocorticolimbic brain development relevant to psychiatric vulnerability', symposium, co-chair (with YL Hurd), 31st CINP World Congress, Vienna Austria.
- Institute of Experimental Medicine, Hungarian Academy of Sciences, invited lecture (18/05; host: N Hajos).
- Cluster of Excellence Brainlinks-Braintools, University of Freiburg (12/04), invited lecture.
- '*Hypothalamic Interfaces in Health and Disease'*, StratNEURO symposium organizer (with T. Hökfelt), Karolinska Institutet (27/03-28/03).

2017

- 'NBS-BIG Oslo seminar', University of Oslo, Norway (06/12), invited seminar.
- SCI-TReCS Scientific Meeting, Paracelsus Private Medical University, Salzburg, Austria, invited presentation (30/11).
- Department of Pharmacology, University of Innsbruck (host: G. Sperk), invited seminar (17/10).
- Department of Child and Adolescent Psychiatry, Medical University of Vienna, invited seminar (22/11).
- 19. Tagung der ÖGPB (Austrian Society for Neuropsychopharmacology and Biological psychiatry) (9/11-10/11), plenary lecture.
- FENS regional meeting, symposium organizer (with A. Alpar), Pecs, Hungary (20-23/09).
- 16th meeting of the Austrian Neuroscience Association, session chair (24-26/09).
- 'The Neuroscience of Obesity', NSAS summer school (17/09-24/09, Siena, Italy; organizer: TL Horvath).
- Single-cell Genomics Workshop, Institut du Cerveau et de la Moëlle épinière, Hôpital Pitié-Salpétrière, Paris (27/06-28/06), invited lecture.
- Gordon Research Conference "*Cannabinoid Functions in the CNS*", discussion leader (*declined*).
- Workshop for Imaging in Austria (organizer: M. Gröger), CeMM, Austrian Academy of Sciences (13/06), invited presetation.
- 20th Congress, Hungarian Society of Anatomy (8-9/06), plenary lecture.
- StratNEURO annual retreat, Karolinska Institutet (05/05), invited seminar.
- "How to inspire students by a professor" lecture at Karolinska Institutet, Stockholm, Sweden (23/03).

2016

- 10th FENS forum of European Neuroscience, workshop (W1) speaker (substitute: J Fuzik).
- 3rd RIKEN CLST Karolinska Institutet SciLifeLab Symposium (substitute: RA Romanov).
- "Karolinska discovers" prime seminar series, invited presenter.
- "The diverse roles of Ca^{2+} in the nervous system", Karolinska Institutet, Uhlen/Hökfelt/Kiehn/Harkany co-organziers (speakers: Celio/Dolphin/Dolmetsch/Verkhratsky/Khakh/Konnerth).
- Department of Anatomy, Semmelweis University, Budapest.

2015

- CEITEC, Mazaryk University, Bruno, Czech Republic.
- 4th IBRO/Kemali School of Neuroscience, CNR, Naples, Italy (28/9-2/10), invited seminar.
- VHS, Planetarium, Vienna, Austria, outreach presentation.
- Gordon Research Conference "*Cannabinoid Functions in the CNS*", chair (with M. Maccarrone), Il Ciocco Resort, Tuscany, Italy.
- Addiction Clinic, Gothenburg, Sweden, invited seminar.
- Austrian Child Psychiatry conference, Pöllau, Austria, plenary speaker.
- Science AAAS – Technology Webinar, Quantitative Western Blotting

(http://webinar.sciencemag.org/webinar/archive/quantitative-western-blotting).
- "Cell communication in health and disease" Ph.D. program, annual conference, Medical University of Vienna, Austria, invited plenary speaker.
- ICB, CNR, Naples, invited seminar.

2014
- "DEVELAGE" symposium (FP7 program), Medical University of Vienna, invited speaker.
- CCNP, Baniff, Canada, invited symposium speaker.
- "Molecular Drug Targets" Ph.D. program, University of Vienna, Austria, seminar speaker.
- Symposion Biologische Psychiatrie, Oberlech, Austria, seminar speaker.
- IBRO Workshop 2014/Annual Meeting of the Hungarian Neuroscience Association, invited plenary speaker.

2013
- Medical University of Vienna, Department of Psychiatry, invited seminar.
- "Diabesity and Cannabesity", Special Lectures at Histon, GW Pharmaceuticals, UK.
- IACM 7th Conference on Cannabinoids in Medicine, Cologne, Germany, invited speaker.
- Dundee University, Scotland, UK, invited seminar.
- Gordon Research Conference "*Cannabinoid Functions in the CNS*", Waterville Valley, NH, USA, vice-chair (with M. Maccarrone).
- 5th Conference on Advances in Molecular Mechanisms of Neurological Disorders, University of Bath, United Kingdom, symposium speaker.
- SONA Conference, Rabat, Morocco, symposium (No. 22; FA Chaudhry/J Attems/A Alpar/A El Manira/SM Keers) organizer/chair.
- University of Kiel, Germany, invited seminar.
- Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden, invited seminar.
- NIH Neuroscience Seminar Series, Bethsda, MD, USA, invited lecture.
- 7th European Conference on Comparative Neurobiology, plenary speaker, Budapest, Hungary.
- 7th European Conference on Comparative Neurobiology, symposium organizer and chair ("Ca^{2+}-binding proteins in the nervous system"); Budapest, Hungary.

2012
- FyFa Forum, Karolinska Institutet, Stockholm, Sweden, invited seminar.
- The Wolfson CARD, Hodgkin Building, King's College London, UK, invited seminar.
- University of Newcastle, United Kingdom, invited seminar.
- Annual MBB conference, Karolinska Institutet, invited speaker.
- Center for Brain Research, Medical University of Vienna, Austria, invited seminar.
- NEURONUS 2012 IBRO & IRUN Neuroscience forum, Krakow, Poland, "main" speaker.
- From genome to phenotype - a multidisciplinary approach to functional genomics and biomedicine, Warsaw, Poland, invited speaker.

2011
- The Journal of Physiology symposium "Cortical inhibitory neuron 'basket cells': from circuit formation to disruption" SfN satellite, Washington DC, USA, invited speaker
- NEURONUS 2011 IBRO Young Neuroscience Forum, Krakow, Poland, keynote speaker
- Gordon Research Conference, Les Diablerets, Switzerland, invited speaker

2010
- Center for Physiology and Pharmacology, Institute of Pharmacology, Medical University Vienna, Austria, invited seminar.
- 33rd Annual Meeting, Canadian College of Neuropsychopharmacology, Ottawa, Canada, invited speaker.
- University of Groningen, Groningen, The Netherlands invited seminar.
- Institut Curie, Paris, France, invited seminar.

2009
- 12th Congress of the Hungarian Neuroscience Society, invited speaker.
- 4th ESN Conference, workshop organizer and chair.
- Indiana University, Bloomington, USA, invited seminar.
- Mount Sinai School of Medicine, New York, USA, invited seminar.
- Strathclyde University, Glasgow, invited seminar.
- SULSA Inaugural Symposium, Edinburgh, UK, invited speaker.
- Gordon Research Conferences, Biddeford, Maine, invited speaker.
- Winter Meeting of the British Pharmacology Society, London, UK, invited speaker.

2008
- University of Dundee, Scotland, UK, invited seminar.
- University of Glasgow, Scotland, UK, invited seminar.
- Centre for Biomolecular Sciences, University of St. Andrews, invited seminar.
- 6th FENS forum of European Neuroscience, symposium speaker.
- Cajal Institute, Madrid, Spain, invited seminar.

2007
- Karolinska Institutet, Stockholm, Sweden, symposium organizer & speaker: 'Endocannabinoid functions in the developing and adult nervous systems'.
- The Wolfson CARD, Hodgkin Building, King's College London, UK, invited seminar.
- Joint BPS Focused Meeting/3rd European Workshop on Cannabinoid Research.
- 17th ESN Meeting, Salamanca, Spain, keynote speaker.
- Johannes Gutenberg University, Mainz, Germany, invited seminar.
- Basic and pharmacological aspects of cannabinoid activity in neurons and reproductive systems, Naples, Italy.
- Max Planck Institute of Neurobiology, Munich, Germany, invited seminar.

- 21st Biennial Meeting of the International Society for Neurochemistry & the 38th Annual Meeting of the American Society for Neurochemistry, Cancun, Mexico, invited speaker.
- Gordon Research Conferences, Le Diablerets, Switzerland, invited speaker.
- Imperial College, London, UK, invited seminar.

2006

- 26th European Winter Conference on Brain Research, Villars sur Ollon, Switzerland.
- INMED/INSERM U29, Marseille, France, invited seminar.
- 10th Centennial Hungarian Alzheimer's Disease Conference, symposium organizer/chair.
- Mount Sinai School of Medicine, New York, NY, USA, invited seminar.
- School of Medical Sciences, University of Aberdeen, UK, invited seminar.
- I. Virtanen Institute Research Seminars, University of Kuopio, Finland, invited seminar.

2005

- Division of Experimental Geriatrics, Neurotec, Karolinska Institutet, seminar speaker.
- 30th FEBS Congress and 9th IUBMB Conference, symposium speaker.
- Gordon Research Conferences, Bates College, Lewiston, ME, USA, invited speaker.
- National Congress of the Italian Society for Neuroscience and Joint Italian-Swedish Neuroscience Meeting, Naples, Italy, invited symposium speaker.

2004

- 8th Hungarian conference of Alzheimer's disease research, Keszthely, Hungary.
- Study Group of Neurochemistry, Leipzig, Germany, invited presentation.

2001

- Hungary, 8th Annual Meeting of the Hungarian Neuroscience Association, chair.

2000

- University of Leipzig, Germany, invited seminar.

1999

- University of Leipzig, Germany, invited seminar.
- Pharmacotherapy of Neurological Disorders. Semmelweis University, symposium speaker.

Adviser of M.Sc. students' laboratory projects

(*entered/completed a Ph.D program)

2021-2022: Brooke Boisvert* (*Fulbright visiting fellow*)

2020: Dorothea von Achsen***** (at present at Medical University of Vienna).

2018: Simon Steffens* (Bielefeld/Karolinska; at present studying at ETH Zurich).

2017/2018: Andras G. Miklosi* (at present at University of Oxford).

2016: Maria Krassnitzer* (PhD in Vienna)*, Julia Schachendorfer (line manager: K. Malenczyk), Maja Zupancic* (Erasmus exchange student; Ljubljana, Slovenia), Solomiia Korchynska* (Austrian Agency for International Cooperation in Education & Research (OeAD-GmbH), Ernst March grantee, the Scholarship Council of the Scholarship Foundation of the Republic of Austria).

2015: Agoston Nagy (Erasmus exchange student; Inst. Exp. Medicine, Hungary), Mateja Tesulov (diploma student, directly supervised by Erik Keimpema), Alexandra Kurek (Erasmus exchange student; University of Krakow, Poland).

2014: Joanne Bakker* (7 motnhs), Alexandra Jurczak (Jagellonian University, Poland).

2013: Marieke van Ziel* (6 motnhs).

2009: Adele Swanson* (University of Edinburgh; 9 motnhs), Arnaud Dalissier (3 motnhs).

2004-2005: Raquel Martin-Ibanez* (4 motnhs), Marton B. Dobszay* (12 motnhs), Eva Rozsa* (6 motnhs).

2003: Hylke-Jan Kingma* (4 motnhs), Paul Berghuis* (3 motnhs).

2000: Jojaneke Beekman* (6 motnhs), Evelien van de Meeberg (12 motnhs).

1999: Ineke M. Dijkstra* (6 motnhs), Sietske J. Elsinga (6 months).

1998: Jan Mulder* (6 months), Annemieke A.M. Rensink (6 months), Judit Janossy (10 months).

Current doctoral students

2023-: **Amina Telalovic** (Medical University of Vienna, principal supervisor).

2023-: **Filip Dikić** (Medical University of Vienna, principal supervisor).

2022-: **Laurent Gueissaz** (Karolinska Institutet, principal supervisor).

Former doctoral students

2019-2023: **Maria Krassnitzer** (Medical University of Vienna, approved for defence, principal supervisor).

2017-2023: **Jasna Jarc** (Medical University of Vienna, approved for defence, principal supervisor).

2022-2023: **Marharyta Krasniakova** (Karolinska Institutet, principal supervisor, EMBO support program for Ukrainian reseacrhers).

2019-2023: **Maja Zupancic** (Medical University of Vienna, PhD.: 07.07.2023, principal supervisor). **Awarded the '***Carl Ludwig Award* **for a young scientists by the Acta Physiologica'**)

2018-2023: **Evgenii O. Tretjakov** (Medical University of Vienna, Ph.D.: 22.02.2023., principal supervisor).

2017-2022: **Solomiia Korchynska** (Ph.D: 29.03.2022; Medical University of Vienna, principal supervisor); at present Scientia Incoming Fellow at the University of Oslo, Norway as well as receipient of an EMBO long-term postdoctoral fellowship (with C Boccara)

2014-2020: **Joanne Bakker** (Ph.D: 02.10.2020; Karolinska Institutet, principal supervisor)

2019-2020: **Tan Xiaoning**, Chinese Scholarship Council support for 24 months (Institute of Neuroscience, School of Medicine, Zhejiang University, China)

2015-2020: **Johannes Beiersdorf** (Ph.D.: 05.03.2020; Medical University of Vienna, principal supervisor)

2015-2018: **Edit Szodorai** (Ph.D.: 18.10.2018; Medical University of Vienna, principal supervisor) at present postdoctoral fellow at Karolinska Institutet (with R Schnell)

2012-2017: **Mingdong Zhang** (Ph.D.: 24.03.2017; half-time: 28.10.2015; Karolinska Institutet, principal supervisor); at present 'Hjärnfonden' postdoctoral fellow at Karolinska Institutet.

2012-2017: **Daniela Calvigioni** (Ph.D.: 31.03.2017; half-time: 20.11.2015; Karolinska Institutet, principal supervisor); at present 'Hjärnfonden' postdoctoral fellow at Karolinska Institutet.

2010-2014: **Katarzyna Maleńczyk** (Ph.D.: 23.09.2014; NENCKI Institute of Experimental Biology, Warsaw Poland/Karolinska Institutet, co-supervisor).

2008-2013: **Ashley Dorning** (Ph.D.: 14.02.2013; Aberdeen University, UK, principal supervisor).

2009-2012: **Lauren Spence** (viva: 05.09.2012; Aberdeen University, UK, principal supervisor).

2007-2011: **Erik Keimpema** (Ph.D.: 05.09.2011; Aberdeen University, UK, principal supervisor)

2005-2010: **Márton B. Dobszay** (Ph.D: 12.05.2010; Szeged University (H), principal supervisor).

2003-2007: **Paul Berghuis** (Ph.D: 03.09.2007; Karolinska Institutet (S), principal supervisor).

'*Scientific Achievement Award'*, 16th Symposium on the Cannabinoids, ICRS (2006)

2000-2005: **Jan Mulder** (Ph.D: 02.11.2005; University of Groningen (NL), referent)

1997-2002: **Bart J. Oosterink** (Ph.D: 01.23.2002; University of Groningen (NL), referent).

Current postdocs & junior group leaders

2023-: **Matthias Fink** (at Karolinska Institutet).

2022-: **Spyros Sideromenos.**

2022-: **Saiprasad Goud Dasugari Varakala.**

2018-: **Zsofia Hevesi** (staff researcher).

2015-: **Valentina Cinquina** (staff researcher).

2012-: **Roman Romanov**; Hjärnfonden, *EMBO long-term fellow*, *EMBO advanced fellow*, internal career agreement (ILV) for assistant professorship.

Recipient of the "Otto Loewi Prize" from the Austrian Neuroscience Association (2019)

Auserplanmäsigrer professor (2022), Medical University of Vienna.

2011-: **Erik Keimpema**, assistant professor (with "*Qualifizierunfsvereinbarung*").

Former postdocs, senior/visiting scientists

2022-2023: **Sylvia Adriana Nybold**.

2018-2023: **Marco Benevento**.

2017-2023: **Martino Caramia** (post-doc with F. Benfenati, Instituto Italiano di Tecnologia).

2018-2021: **Edit Szodorai,** (patent associate, AWA).

2018-2021: **Vitaliy Kasymov**.

2018-2021: **Martin Häring**, (at present at University Hospital Münster).

2018: **Katrin Kaineder**.

2015-2017: **Fatima Girach** (at present at MySugr).

2014: **Gloria Arque**.

2014-2018: **Katarzyna Malenczyk**, (at present at MySugr); *'Young Investigator Award' Center for Brain Research, 2017.*

2014: **Ismael Valladolid Acebes** (with T. Hökfelt, at present at Berggren lab/Karolinska Institutet).

2013-2016: **Janos Fuzik** (at present at Karolinska Institutet with junior group-leader start-up grant from Vetenskapsrådet (2019))

2010-2013: **Alán Alpár**, senior technologist; *associate professorship ("habilitation"):* 20.12.2012 ("docent in anatomy" at Karolinska Institutet; at present Professor of Anatomy (D.Sc.) and vice principal, Semmelweis University, Budapest).

2009-2013: **Giuseppe Tortoriello** (at present at Life Technologies).

2008-2012: **Misha Zilberter**, Hjärnfonden postdoctoral awardee (at present post-doctoral fellow at Gladstone Institutet, USA).

2007-2010: **Klaudia Barabás** (at present postdoctoral fellow at University of Pecs).

2007-2010: **Jan Mulder** (*Alzheimer's Research Trust UK fellowship*; at present platform lead at the Human Protein Atlas/Science for Life Laboratories, Sweden).

2007: **Faith R. Reyes**, visiting graduate student, Department of Pharmacology (Nephi Stella's laboratory), Health Sciences Center, University of Washington, Seattle, USA.

2005-2006: **Tamás Farkas**, senior scientist, Department of Comparative Physiology, University of Szeged, Hungary (at present associate professor).

2005-2006: **Tamás J. Görcs**, visiting professor, Department of Anatomy and Embryology, Faculty of Medicine, Semmelweis University, Budapest, Hungary.

Senior level recruitments

2022-: **Robert Schnell** (associate professor, Karolinska Institutet & from 01.10.2023 at the Medical University of Vienna).

2018-2020: **Maria Eleni Kastriti** (NovoNordisk Foundation postdoctoral fellow, Karolinska - Medical University of Vienna exchange).

2016-2019: **Julian Petersen** (International postdoctoral fellow, Karolinksa/Vetenskapsrådet – Medical University of Vienna).

2015: **Magda Mageira** (*EMBO short-term fellow*; C. Janke's lab, Institut Curie).

2015-2020: **Igor Adameyko** (*ERC Consolidator and Synergy grants*), Professor of Neuroimmunology (2020), Medical University of Vienna, Austria.

Senior staff members, professor emeriti

2013-2022: Ao. Univ.-Prof. Dr. Christian Pifl.

2013-2018: Dr. Michael Berger, Dr. Margot Ernst.

2013-2020: em. Univ.-Prof. Oleh Hornykiewicz.

2021-: em. Univ.-Prof. Siegfried Kasper.

Administrative & technical support

2022-: Daniel Miloradovic (lab manager).

2018-: Alexandra Tilscher (PA).

2013-2022: Ingrid Kafka (PA).

2017-2018: Anna Exinger (grant administrator).

2013-: Alessa Reinthaler, Patrick Rebernik, Raphael Holzinger, Elisabeth Dögl, Karin Schwarz, Gabriele Koth, Alexandra Wolf, Erzsebet Borok, Harald Reither, Sabah Rehman, Ionela Nagelreiter, Olga Olszanska, Mark Elevado (laboratory technicians).

2005-2013: Orsolya K. Penz (research coordinator)

2008: Vicky Law (laboratory technician)

Referee duties at international/national levels

French National Research Agency (l'Agence Nationale de la Recherche, 2012), FRC – Federation pour la Recherche sur le Cerveau (France, 2014), Austrian Research Council (2002/2003, 2010), Alzheimer's Association (USA, 2005-2006, 2010), Alzheimer's Research Trust UK (2007/2008), Irish National Research Fund (2002), J.S. Guggenheim Memorial Foundation (USA, 2005), Catalan Agency for Health Technology Assessment and Research (Spain, 2006, 2014,2018), The Wellcome Trust (UK, 2007-2009), Medical Research Council UK (MRC, 2008-2009), BBSRC (2009), EMBO (short-term and long-term fellowship programs; 2008-2020), MUIR/PRIN, Italy (2012-2013, 2018, 2020), Swiss National Science Foundation (2020, 2023).

External opponent (reviewer) at Ph.D. defences

Louis Faure, ‚*Progressive development and heterogeneity of the neural crest lineage and spiral ganglion neurons'.* Ph.D. thesis, supervisor: I. Adameyko, Medical University of Vienna (June 23, 2023)

Dylan Matthew Belmont-Rausch, ‚*Hypothalamic regulation of glucose metabolism: A single-cell examination*', Ph.D. thesis, supervisor: Tune H. Pers, University of Copenhagen, Denmark (October 10, 2022).

Philipp Moser, '*Directed self-assembly of highly vascularized islet organs*', Ph.D. thesis, supervisor: Bruno Podesser, Medical University of Vienna, Austria (March 3, 2022).

Brenda Marquina Sanchez, '*Identification of novel regulators of insulin expression in pancreatic alpha cells*', Ph.D. thesis, supervisor: Stefan Kubicek, Medical University of Vienna, Austria (December 2, 2021).

Silvia Pinati, 'Identification of novel druggable targets involved in cellular and metabolic alterations implicated in neurodegenerative diseases', Ph.D. thesis, supervisors: Maria Luisa Malosio and Michela Matteoli, Humanitas University, Milan, Italy (May 19, 2021).

Johannes Grießner, '*Neural circuitry underlying the benzodiazepine anxiolytic effect*', Ph.D. thesis, supervisor: Wulf Haubensak, Research Institute of Molecular Pathology, Austria (January 22, 2019).

Tugrul Ozdemir, '*Diverse recruitment of prefrontal neurons in working memory-guided decision making and cognitive flexibility*', Ph.D. thesis, supervisor: Thomas Klausberger, Medical University of Vienna, Austria (September 30, 2019).

Y Liu, '*Morphological and functional effects of insulin signaling and the bHLH transcription factor Dimmed on different neuron types in Drosophila'*, Ph.D. thesis, supervisor: Dick Nässel, Stockholm University, Sweden (February 26, 2016).

A Kulkarni, '*Development of synaptic layer identity in the Drosophila visual system'*, Ph.D. thesis, supervisor: Thomas Hummel, University of Vienna (June 30, 2015).

MJ Stensrud, '*Non-classical release of classical neurotransmitters'*, Ph.D. thesis, supervisor: Vidar Gundersen, University of Oslo (April 13, 2015).

AM Lilja, '*Stimulating neuroprotective and regenerative mechanisms in Alzheimer's disease*', Ph.D. thesis, supervisors: A Nordberg & A Marutle, Karolinska Institutet (September 5, 2013).

S Cardoso Lopes Ferreira, '*Presynaptic A_2A adenosine receptors control CB_1 cannabinoid receptor-mediated effects at the corticostriatal nerve terminals*', Ph.D thesis, supervisors: A. Köfalvi & RA Cunha, Universidade de Coimbra, Portugal (December 20, 2012).

C Marks, '*Regulatory mechanisms in olfactory system assembly and function.*' Ph.D. thesis, supervisor: CF Ibanez, Karolinska Institutet, Stockholm, Sweden (December 07, 2012).

MJ Oudin, '*The role of endocannabinoids in adult neurogenesis.*' Ph.D. thesis, supervisor: P Doherty, The Wolfson CARD, King's College, London, UK (June 29, 2011).

DJ Walker, '*The regulation of diacylglycerol lipase α expression'* Ph.D thesis, supervisor: P Doherty; The Wolfson CARD, King's College, London, UK (February 17, 2009).

C Björkdahl, '*Tau and neurofilament proteins in Alzheimer's disease and related cell models*.' Ph.D. thesis, supervisor: JJ Pei; Departments of Neurobiology, Care Sciences and Society, Alzheimer's Disease Research Center, Karolinska Institutet, Stockholm, Sweden (December 14, 2007).

J-L Boulland, '*Recycling the neurotransmitter glutamate in the CNS'*. Ph.D. thesis, supervisor: FA Chaudhry, Department of Anatomy, Institute of Basic Medical Sciences, University of Oslo, Norway (October 12, 2004).

Member of the evaluation committee (half-time controls)/internal examiner

YK Law, 'Metabolic modulation of pathologic proteostasis' (G. Superti-Furga; CeMM, Vienna, Austria), PhD committee member (2023-2024).

V Mussetto, 'Supraspinal neuroinflammation in pain comorbidities: role of the parabrachial nucleus', (J. Sandkühler, Medical University of Vienna, Austria), PhD committee member (2021-2022).

T Cassels, 'Targeting chromiatin for alpha to beta cell transdifferentiation' (S. Kubicek's lab, CeMM, Austria), PhD committee member (2015-2017).

S Lagoun, 'The role of GABAergic interneurons in prefrontal cortex network activityduring a rule-switching task' (T. Klausberger's lab, Medical University of Vienna), PhD committee member (2015).

AS Sase, 'Hippocampal receptors, neurotransmitters involved in rodent cognition and cognitive enhancement'. PhD thesis, internal review, Medical University of Vienna (2015).

A Arszovszki, 'Axonal, molecular and temporal diversity of pyramidal cells in the ventral CA1 of

the hippocampus'. PhD thesis, internal review, Medical University of Vienna (2015).

S Wee, 'Ion fluxes control glioma cancer stem cell survival'. Half-time Ph.D. program control, Department of Pharmacology and Physiology, Karolinska Institutet, Stockholm, Sweden (2013).

J Song, 'Plasticity of the spinal locomotor circuitry'. Half-time Ph.D. program control, Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden (2013).

M Olah, 'Microglia phenotypes: in CNS plasticity and regeneration'. Member of the manuscript committee, BCN, University of Groningen, The Netherlands (2011).

S Abdelhady, 'Ion channels in control of self-renewal'. Half-time Ph.D. program control, Department of Medical Biochemistry & Biophysics, Karolinska Institutet, Stockholm, Sweden (2011).

M Sokumbi, 'Inter-individual differences in fMRI entropy measurements in old age'. First and second year assessments, internal examiner; University of Aberdeen (2009, 2010).

S Annand, 'The role of bioelectric fields in planarian regeneration'. First year assessment, internal examiner; University of Aberdeen (2010).

D Ribeiro, 'Novel protocols for the differentiation and functional integration of embryonic and neural stem cells-derived dopaminergic neurons in rodent models of Parkinson's disease: focus on the Wnt pathway. Half-time Ph.D. program control, Department of Medical Biochemistry & Biophysics, Karolinska Institutet (2009).

C Björkdahl, 'Mechanisms behind accumulation of tau, neurofilaments and/or αB-crystallin in degenerating neurons'. Half-time Ph.D. program control, Institute of Neurotec, Department of Experimental Geriatrics, Karolinska Institutet (2006).

M Almgren, 'Neural growth with special emphasis on megalencephaly'. Half-time Ph.D. program control, Center of Molecular Medicine, Karolinska Institutet (2006).

S Donohue, 'Development of radioligands for *in vivo* molecular imaging of cannabinoid type-1 (CB1) receptors'. Half-time Ph.D. program control, Psychiatry Section, Department of Clinical Neuroscience, Karolinska Institutet (2006).

Docentship evaluation ("habilitation" committee member) & professorial search committees

Patrik Krieger in "Neuroscience" from Department of Neuroscience, Karolinska Institutet (2012).

Yury M. Morozov, promotion to faculty position, Yalr University (2016).

Professor and Chair of Psychiatry, Medical University of Vienna (member, search committee, 2019).

Professor and Chair of Neuroimmunology, Medical University of Vienna (member, search committee, 2019).

Professor and Chair in Neuronal Cell Biology, Medical University of Vienna (chair, review subcommittee, 2020).

Quingfeng Wu, tenure track evaluation, Chinese Academy of Sciences (2022).

Editorial boards

Editorial board member, Current Signal Transduction Therapy, Bentham Sci. Publisher (2006-).

Honorary editorial board member, International Journal of BioSciences and Technology (2008-2018).

Scientific review associate, European Journal of Neuroscience (2008-).

Review editor, Frontiers in Systems Biology (2010-).

Review editor, Frontiers in Neurodegenerative Diseases (2010-).

Editorial board member, Dataset Papers in Neuroscience (2012-2017).

Editorial board member, Journal of Biochemistry & Biophysics (2013-2018).

Field editor (Neuroscience), Amino Acids (Springer; 2015-).

Editorial board member, Cannabis and Cannabinoid Research (Mary Ann Liebert Inc.; 2016-).

Editorial board/assoc. editor, Acta Neuropathologica Communications (Springer; 2016-2018).

Editorial board member, Cellular Signalling (2018-).

Editorial board member, Biology Direct (2020-).

Editorial board Member, JATROS Neurologie & Psychiatrie (2021-).

Editorial board Member, Cells (2022-).

Guest editor: "*Molecular mechanisms of neuronal specification*" – European Journal of Neuroscience, Special Issue (published: November, 2011).

Guest editor: "*Neurotrophin-endocannabinoid interactions in pain*" – European Journal of Neuroscience, Special Issue (published: February, 2014). Co-editors: A Cattaneo and HU Zeilhofer.

Ad-hoc reviewer for scientific journals

These include contributing peer-review (referee) comments on more than one occasion to:

BBA, Behavioural Brain Research, Biological Psychiatry, Brain, Brain Research, Brain Structure and Function, British Journal of Pharmacology, Cell, Cell Communication & Signalling, Cell Metabolism, Cell Reports, Cell Research, Cerebral Cortex, Developmental Brain Research, Developmental Neurobiology, CCA, eLife, EMBO Journal, EMBO Molecular Medicine, Endocrinology, The European Journal of Neuroscience, Genome Biology, Journal of Clinical Investigations, Journal of Neurochemistry, Journal of Chemical Neuroanatomy, Journal of Neuroscience Research, Journal of Physiology, The Journal of Comparative Neurology, The Journal of Neuroscience, Molecular Psychiatry, Nature Communications, Nature Reviews Neuroscience, Nature Neuroscience, Neurobiology of Aging, Neurobiology of Disease, NeuroReport, Neuroscience, Neuroscience Letters, Physiology and Behaviour, Proceedings of the National Academy of Sciences USA (PNAS), Stem Cell Research, Synapse, Science, Scientific Reports (Nature Publ.).

Industrial collaborations/test site agreements

Zeiss Microscopy GmbH, Munich, Germany (light-sheet and superresolution microscopy).

GE Healthcare Life Sciences, Uppsala Sweden (Amersham WB system).

Media appearances, interviews, press releases

Deutschlandfunk, Germany:

http://www.dradio.de/dlf/sendungen/forschak/ (Interviewer: Kristin Raabe; 25.05.2007).

Szonda/Science section, Kossuth Radio, Hungary:

www.radio.hu/read/227537/rid/PVl6Tg== (Interviewer: Júlia Gimes, 30.06.2007).

Élet és Tudomány, Hungary – Fék az agyban – az idegrendszer marihuánája és a kannabisz (LXII (44): 1389-1391; 2.11.2007).

Scientific American:

http://www.scientificamerican.com/article.cfm?id=marijuana-like-chemicals-guide-fetal-brain-cells (24.05.2007).

Hungarian Academy of Sciences – Mother's drug, fetus' posion (www.mta.hu; 25.05.2007).

Tentakel, Sweden:

(http://tentakel.vr.se/nummer/200804/artiklar/)

Cannabisforskning gav EMBO-pengar (Interviewer: Siv Engelmark Cederborg; 28.04.2008).

BBC News on-line:

http://news.bbc.co.uk/1/hi/scotland/north_east/8074082.stm – 'Fund for city Alzheimer's study' (31.05. 2009).

BBC News on-line:

http://news.bbc.co.uk/1/hi/scotland/north_east/7456625.stm – Cannabis can harm foetal brain (16.06.2008)

BBC News on-line:

http://news.bbc.co.uk/1/hi/health/7948465.stm

Alzheimer's and epilepsy (19.03.2009).

Times online:

http://www.timesonline.co.uk/tol/news/uk/scotland/article5934869.ece - Alzheimer's and epilepsy (2009).

European Research Headlines:

http://ec.europa.eu/research/headlines/news/article_09_04_28_en.html (2009).

Royal Society of Edinburgh:

http://www.sciencescotland.org/feature.php?id=40 - Mind-expanding science (2009).

British Pharmacological Society, 'Cannabinoid signalling in brain repair – symposium review - http://www.bps.ac.uk/uploadedfiles/podcasts/TRANSCRIPTDavidAKendallCannabinoidSignallingInBrainRepairWIN09.pdf (with DA Kendall, D Baker, P Doherty, F Molina-Holgado; 2010).

Press release: http://internwebben.ki.se/en/anders-jahre-prize-young-scientists-tibor-harkany (2012).

Press release: http://www.uio.no/om/tall-og-fakta/uio-priser/jahreprisen/ (2012).

Tidsskrift for Nordisk Biokjemisk Selskap, "Anders Jahres medisinske priser for 2012", Nr. 4/2012, pages 16-17.

Press release: http://ki.se/ki/jsp/polopoly.jsp?d=130&a=166848&l=en&newsdep=130 (2013).

Eric K. Fernström foundation:

http://www.med.lu.se/eric_k_fernstroems_stiftelse/fernstroemspriserna/svenska_priset (2013).

Press release:

http://ki.se/ki/jsp/polopoly.jsp?d=130&a=173146&l=en, http://www.meduniwien.ac.at/homepage/1/news-and-topstories/?tx_ttnews%5Btt_news%5D=4381&cHash=ef17d967db (2014).

ORF Austria: http://science.orf.at/stories/1732429/ (2014).

Der Standard:

http://derstandard.at/1389858319981/Cannabis-beeintraechtigt-Gehirnentwicklung-des-Foetus (2014).

Press release:

http://www.meduniwien.ac.at/homepage/1/news-and-topstories/?tx_ttnews%5Btt_news%5D=5138&cHash=dda97d00026cc9667dd2d304193c94c7 (2014)

Press release (secretagogin/stress):

http://www.meduniwien.ac.at/homepage/1/news-and-topstories/?tx_ttnews%5Btt_news%5D=5302&cHash=217cf5c503a66cf6434b2cf627c08280 (2014).

Austrian Television (ORF), Channel 2: broadcast on cannabis – aired on 17.05, 9.05.2015.

Press release (Dr. Adameyko joins Center for Brain Research, ERC):

https://www.meduniwien.ac.at/homepage/1/people/?tx_ttnews%5Btt_news%5D=5558&cHash=46ced4aa27ca5051e79ea852b3032714 (2015)

Press release (endocannabinoids/pancreas):

https://www.meduniwien.ac.at/homepage/1/news-and-topstories/?tx_ttnews%5Btt_news%5D=6095&cHash=77669268cc18acdf179f12c8b145d0ab (2015).

Press release (ERC advanced grant award):

http://www.lisavienna.at/en/news/meduni-vienna-generous-advanced-erc-grants-meduni-vienna-researchers (2015).

Press release (Patch-seq):

https://www.meduniwien.ac.at/web/en/about-us/news/detailsite/?tx_news_pi1%5Bnews%5D=3191&tx_news_pi1%5Bcontroller%5D=News&tx_news_pi1%5Baction%5D=detail&cHash=81fcbe96662d9896ccf3f46ab8a97166 (2016).

Pess release (neuronal diversity in the hypothalamus):

https://www.meduniwien.ac.at/web/en/about-us/news/detailseite/2016/news-in-december-2016/charting-a-molecular-map-of-the-brain-a-catalogue-of-dozens-of-new-neuronal-subtypes-in-the-hypothalamus/ (2016).

Hungarian Academy of Sciences (secretagogin/cell migration): http://mta.hu/english/a-novel-principle-to-mobilise-neurons-for-brain-repair-107419 (2017).

Press release (TRPV1-secretagogin function):

https://medicalxpress.com/news/2017-06-shield-beta-cells-option-diabetes.html

Pregnancy/cannabis (Austria Center Vienna in association with the 31st CINP meeting):

https://www.acv.at/presse/Wissenschaftskommunikation/CINP_2018.html

Press release:

https://www.meduniwien.ac.at/web/en/about-us/news/detailsite/2019/news-im-november-2019/high-fat-maternal-diet-can-cause-brain-damage-in-the-unborn-child/

Press release:

https://www.meduniwien.ac.at/web/en/about-us/news/detailsite/2019/news-im-dezember-2020/pregnancy-coffee-nicotine-and-amphetamines-activate-hot-spots-in-the-foetal-brain/

Press release:

https://www.meduniwien.ac.at/web/en/about-us/news/detailsite/2019/news-im-november-

2019/drug-abuse-during-pregnancy-can-cause-diabetes-in-children-later-in-life-mechanism-uncovered/

Press release:

https://www.meduniwien.ac.at/web/en/about-us/news/detailsite/2020/news-im-mai-2020/molecular-dissection-of-how-the-brains-interface-controlling-bodily-metabolism-develops-is-complete/?tx_news_pi1%5BoverwriteDemand%5D%5Bcategories%5D=11&cHash=962cde0e9e57e043ee74d0b9d507888b, https://news.ki.se/brain-study-contributes-to-increased-understanding-of-endocrine-diseases

ERC Award 2021:

https://www.meduniwien.ac.at/web/ueber-uns/news/news-im-april-2021/tibor-harkany-erhaelt-renommierten-erc-advanced-grant/

die Presse 2022:

https://www.diepresse.com/6104458/was-kann-cannabis

Interview in "Der Österreichische Wissenschaftsblog, Schrödingers Katze":

https://www.schroedingerskatze.at/medizin-zukunftshoffnung-cannabis/

(Additional media clippings can be searched at http://www.google.com)

Other types of media presence

Reference contribution, NCBI:

- secretagogin [Homo sapiens], **NP_008929.2**; secretagogin [Mus musculus], **NP_663374.1** (Attems *et al*., Proc. Natl Acad Sci USA (2012), Mulder *et al*., Eur J Neurosxi (2010); Mulder *et al*., Proc Natl Acad Sci USA (2009)).
- **Reference contribution, "The #1 Antibody Resource"** (www.antibodyresource.com):
- Rabbit anti-secretagogin antibody database, Attems *et al*., Proc. Natl Acad Sci USA (2012)
- **Reference contribution, "The #1 Antibody Resource"** (www.antibodyresource.com):
- Rabbit anti-monoacylglycerol lipase antibody database, Malenczyk *et al*., JBC (2013)
- **Reference contribution, "The #1 Antibody Resource"** (www.antibodyresource.com):
- Rabbit anti-vesicular acetylcholine transporter antibody database, Keimpema *et al*., JBC (2013)
- **Zeiss Lightsheet.Z1,** reference video: https://zeiss-microscopy.uberflip.com/h/i/107900768-zeiss-lightsheet-z-1-whole-mouse-embryo-cleared-with-cubic-reagent
- Contribution to the Exhibition '**the Invisible Body (Den osynliga kroppen)**' – pancreatic islet; https://ki.se/en/news/science-becomes-art

Bibliometric summary

Cumulative impact factor[1]: 1,446.269 (original papers/reviews: 1,136.926 /309.343)

Cumulative citations: 10,284 (ISI Web of Science); 14,656 (Google Scholar)

***h*-index**: 55 (ISI Web of Science); 65 (Google Scholar)

Publications

Original papers[2]

1. **Harkany T**, Lengyel Z, Soós K, Penke B, Luiten PGM, Gulya K. Cholinotoxic effects of β-amyloid$_{(1-42)}$ peptide on cortical projections of the rat nucleus basalis magnocellularis. ***Brain Res*** 1995, 695:71-75. (2.526/87; Chapter 2 of Ph.D. thesis [1999])
2. **Harkany T**, De Jong GI, Soós K, Penke B, Luiten PGM, Gulya K. β-Amyloid$_{(1-42)}$ affects cholinergic but not parvalbumin-containing neurons in the rat medial septum. ***Brain Res*** 1995, 698:270-274. (2.526/67; Chapter 3 of Ph.D. thesis [1999])
3. **Harkany T**, Lengyel Z, Kása P, Gulya K. Chronic aluminum treatment results in aluminum deposits and affects M1 muscarinic receptors in rat brain. *Neurobiology* 1996, 4:35-43. (15)
4. **Harkany T**, Sasvari M, Nyakas C. Chronic ethanol ingestion-induced changes in open-field behavior and oxidative stress in the rat. ***Pharmacol Biochem Behav*** 1997, 58:195-201. (1.480/23)
5. Ábrahám I, Veenema AH, Nyakas C, **Harkany T**, Bohus BGJ, Luiten PGM. Effect of corticosterone and adrenalectomy on NMDA-induced cholinergic cell death in rat magnocellular nucleus basalis. ***J Neuroendocrinol*** 1997, 9:713-720. (2.563/26)
6. **Harkany T**, O'Mahony S, Kelly JP, Soós K, Törö I, Penke B, Luiten PGM, Nyakas C, Gulya K, Leonard BE. β-Amyloid(Phe(SO_3H)^{24})25-35 in rat nucleus basalis induces behavioral dysfunctions, impairs learning and memory and disrupts cortical cholinergic innervation. ***Behav Brain Res*** 1998, 90:133-145. (2.796/142; Chapter 4 of Ph.D. thesis [1999])
7. O'Mahony S, **Harkany T**, Rensink AAM, Ábrahám I, De Jong GI, Varga JL, Zarándi M, Penke B, Nyakas C, Luiten PGM, Leonard BE. β-Amyloid-induced cholinergic denervation correlates with enhanced nitric oxide synthase activity in rat cerebral cortex: reversal by NMDA receptor blockade. ***Brain Res Bull*** 1998, 45:405-411. (1.650/65; Chapter 5 of Ph.D. thesis [1999])
8. Hortobágyi T, **Harkany T**, Reisch R, Urbanics R, Kálmán M, Nyakas C, Nagy Z. Neurotrophin-mediated neuroprotection by fetal telencephalic grafts following focal cerebral ischemia in the rat: a preventive approach. ***Brain Res Bull*** 1998, 47:185-191. (1.650/16)
9. **Harkany T**, Mulder J, Sasvári M, Ábrahám I, Kónya C, Zarándi M, Penke B, Luiten PGM, Nyakas C. N-methyl-D-aspartate receptor antagonist MK-801 and radical scavengers protect cholinergic nucleus basalis neurons against β-amyloid neurotoxicity. ***Neurobiol Dis*** 1999, 6:109-121. (5.023/90; Chapter 6 of Ph.D. thesis [1999])
10. **Harkany T**, Ábrahám I, Laskay G, Timmerman W, Jost K, Zarándi M, Penke B, Nyakas C, Luiten PGM. Propionyl-IIGL tetrapeptide antagonizes β-amyloid excitotoxicity in rat nucleus basalis. ***NeuroReport*** 1999, 10:1693-1698. (2.682/23; Chapter 8 of Ph.D. thesis [1999])
11. **Harkany T**, Dijkstra IM, Horvath KM, Ábrahám I, Keijser J, Van der Zee EA, Luiten PGM. Increased amyloid precursor protein expression and

[1]IFs per annual indexes of ISI Journal Citation Reports.

[2] Citations per Google Scholar as of September 19, 2023

serotonergic sprouting following excitotoxic lesion of the rat magnocellular nucleus basalis: neuroprotection by Ca^{2+} antagonist nimodipine. ***Neuroscience*** 2000, 101:101-114. (3.563/62)

12. Ábrahám I, **Harkany T**, Horvath KM, Veenema A, Penke B, Nyakas C, Luiten PGM. Chronic corticosterone administration dose-dependently modulates $A\beta_{(1-42)}$ and NMDA-induced neurodegeneration in rat magnocellular nucleus basalis. ***J Neuroendocrinol*** 2000, 12:486-495. (2.598/106; Chapter 7 of Ph.D. thesis [1999])
13. **Harkany T**, Ábrahám I, Timmerman W, Laskay G, Tóth B, Sasvári M, Kónya C, Sebens JB, Korf J, Nyakas C, Zarándi M, Soós K, Penke B, Luiten PGM. β-Amyloid neurotoxicity is mediated by a glutamate-triggered excitotoxic cascade in rat nucleus basalis. ***Eur J Neurosci*** 2000, 12:2735-2745. (3.862/305)
14. Horvath KM, Ábrahám I, **Harkany T**, Meerlo P, Bohus BGJ, Nyakas C, Luiten PGM. Postnatal treatment with ACTH4-9 analog ORG2766 attenuates NMDA-induced excitotoxicity in rat nucleus basalis in adulthood. ***Eur J Pharmacol*** 2000, 405:33-42. (2.236/39)
15. Hortobágyi T, Hortobágyi S, Görlach C, **Harkany T**, Benyó Z, Görögh T, Nagel W, Wahl M. A novel brain trauma model in the mouse: effects of dexamethasone treatment. ***Pflüg Arch – Eur J Physiol*** 2000, 441:409-415. (2.203/32)
16. **Harkany T**, Mulder J, Horvath KM, Meeberg E, Nyakas C, Luiten PGM. Oral post-lesion administration of $5\text{-}HT_{1A}$ receptor agonist Repinotan hydrochloride (BAY x 3702) attenuates NMDA-induced delayed neuronal death in rat magnocellular nucleus basalis. ***Neuroscience*** 2001, 108:629-642. (3.219/57)
17. **Harkany T**, Grosche J, Mulder J, Horvath KM, Keijser J, Hortobágyi T, Luiten PGM, Härtig W. Short-term consequences of N-methyl-D-aspartate excitotoxicity in rat magnocellular nucleus basalis: effects on in vivo labelling of cholinergic neurons. ***Neuroscience*** 2001, 108:611-627. (3.219/26)
18. **Harkany T**, O'Mahony S, Kelly JP, Kónya C, Keijser J, Borostyánköi ZA, Görcs T, Zarándi M, Penke B, Leonard BE, Luiten PGM. $\beta\text{-Amyloid}_{(1-42)}$-induced cholinergic lesions in the rat nucleus basalis bi-directionally modulate serotonergic innervation of basal forebrain and cerebral cortex. ***Neurobiol Dis*** 2001, 8:667-678. (4.487/46)
19. Gies U, Görcs TJ, Mulder J, Planz O, Stitz L, Bilzer T, Luiten PGM, **Harkany T**. Cortical cholinergic decline parallels the progression of Borna virus encephalitis. ***NeuroReport*** 2001, 13:3767-3772. (2.374/18)
20. Horvath KM, Härtig W, Van der Veen R, Keijser J, Mulder J, Ziegert M, Van der Zee EA, **Harkany T**, Luiten PGM. 17β-Estradiol enhances cortical cholinergic innervation and preserves synaptic density following excitotoxic lesions to the rat nucleus basalis magnocellularis. ***Neuroscience*** 2002, 110:489-504. (3.457/53)
21. **Harkany T**, Garzuly F, Nyakas C, Luiten PGM, Linke RP, Virágh S. Cutaneous lymphatic amyloid deposits in Hungarian-type familial transthyretin amyloidosis: A case report. ***Br J Dermatol*** 2002, 146:674-679. (2.696/15)
22. **Harkany T**, Varga C, Grosche J, Mulder J, Luiten PGM, Hortobágyi T, Penke B, Härtig W. Distinct subsets of nucleus basalis neurons exhibit similar sensitivity to excitotoxicity. ***NeuroReport*** 2002, 13:767-772. (2.265/11)
23. Härtig W, Varga C, Kacza J, Grosche J, Seeger J, Luiten PGM, Brauer K, **Harkany T**. *In vivo* labeling of rabbit cholinergic basal forebrain neurons with fluorochromated antibodies. ***NeuroReport*** 2002, 13:1395-1398. (2.265/8)
24. Hortobágyi T, Görlach C, Benyó Z, Lacza Z, Hortobágyi S, Wahl M, **Harkany T**. Inhibition of neuronal nitric oxide synthase-mediated activation of poly(ADP-ribose) polymerase in traumatic brain injury: neuroprotection by aminobenzamide. ***Neuroscience*** 2003, 121:983-990. (3.601/37)
25. Oosterink BJ, **Harkany T**, Luiten PGM. Post-lesion administration of $5\text{-}HT_{1A}$ receptor agonist 8-OH-DPAT protects cholinergic nucleus basalis neurons against NMDA excitotoxicity. ***NeuroReport*** 2003, 14:57-60. (2.503/23)
26. Härtig W, Paulke B-R, Varga C, Seeger J, **Harkany T**, Kacza J. Electron microscopic analysis of nanoparticles delivering thioflavin-T *in vivo*: Implications for targeting β-amyloid in Alzheimer's disease. ***Neurosci Lett*** 2003, 338:174-176. (1.967/72)
27. Lucas G, Hendolin P, **Harkany T**, Agerman K, Paratcha G, Holmgren C, Zilberter Y, Sairanen M, Minichiello L, Castren E, Ernfors P. Reinforcement of morphine-induced analgesia by neurotrophin-4 mediated TrkB activation, ***Nat Neurosci*** 2003, 6:221-222. (15.141/23)
28. Varga C, Härtig W, Grosche J, Luiten PGM, Seeger J, Brauer K, **Harkany T**. Rabbit forebrain cholinergic system: morphological characterization of nuclei and distribution of cholinergic terminals in the cerebral cortex and hippocampus. ***J Comp Neurol*** 2003, 460:597-611. (3.672/44)
29. Hortobágyi T, Szüts Á, Csenki M, **Harkany T**, Zádor Z, Katona M, Bódi I. Vein of Galen malformation combined with atrial septal defect in a neonate. ***Clin Neuropathol*** 2003, 22:193-198. (1.051/5)
30. Arendt T, Stieler J, Strijkstra AM, Hut RA, Rüdiger J, Van Der Zee EA, **Harkany T**, Holzer M, Härtig W. Reversible paired helical filament-like phosphorylation of tau is an adaptive process associated with neuronal plasticity in hibernating animals. ***J Neurosci*** 2003, 23:6972-6981. (8.306/412)
31. Holmgren C, **Harkany T**, Svennenfors B, Zilberter Y. Pyramidal cell communication within local networks in later 2/3 of rat neocortex. ***J Physiol*** 2003, 551:139-153. (4.650/652)
32. **Harkany T**, Härtig W, Berghuis P, Dobszay MB, Zilberter Y, Edwards RH, Mackie K, Ernfors P. Complementary distribution of type 1 cannabinoid receptors and vesicular glutamate transporter 3 in basal forebrain suggests input-specific retrograde signaling by cholinergic neurons. ***Eur J Neurosci*** 2003, 18:1979-1992. (3.872/74)
33. Härtig W, Riedel A, Grosche J, Edwards RH, Fremeau RT Jr., **Harkany T**, Brauer K, Arendt T. Complementary distribution of vesicular glutamate transporters 1 and 2 in the nucleus accumbens of rat:

relationship to calretinin-containing extrinsic innervation and calbindin-immunoreactive neurons. ***J Comp Neurol*** 2003, 465:1-10. (3.672/46)

34. **Harkany T***, Andäng M*, Kingma HJ, Görcs TJ, Holmgren CD, Zilberter Y, Ernfors P. Regions-specific generation of functional neurons from naive embryonic stem cells in adult brain. ***J Neurochem*** 2004, 88:1229-1239. (4.824/59) | * *equal contributions*
35. **Harkany T***, Holmgren CD*, Härtig W, Qureshi T, Chaudhry FA, Storm-Mathisen J, Sousa KM, Schulte G, Berghuis P, Dobszay MB, Fremeau RT JR, Edwards RH, Mackie K, Ernfors P, Zilberter Y. Endocannabinoid-independent retrograde signaling at inhibitory synapses in layer 2/3 of neocortex: Involvement of vesicular glutamate transporter 3. ***J Neurosci*** 2004, 24:4978-4988. (7.907/104) | * *equal contributions*
36. Berghuis P, Dobszay MB, Sousa KM, Schulte G, Mager PP, Härtig W, Görcs TJ, Zilberter Y, Ernfors P, **Harkany T**. Brain-derived neurotrophic factor controls functional differentiation and microcircuit formation of selectively isolated fast-spiking GABAergic interneurons. ***Eur J Neurosci*** 2004, 20:1290-1306. (3.820/105)
37. Horvath KM, **Harkany T**, Mulder J, Koolhaas JM, Luiten PGM, Meerlo P. Neonatal handling increases sensitivity to acute neurodegeneration in adult rats. ***Devl Neurobiol*** 2004, 60:463-472. (3.923/16)
38. **Harkany T**, Dobszay MB, Cayetanot F, Härtig W, Aujard F, Mackie K. Redistribution of CB_1 cannabinoid receptors during evolution of cholinergic basal forebrain territories and their cortical projection areas: A comparison between the grey mouse lemur (*Microcebus murnius*) and rat. ***Neuroscience*** 2005, 135:595-609. (3.410/35)
39. Mulder J, **Harkany T**, Czollner K, Cremers TIFH, Keijser JN, Nyakas C, Luiten PGM. Galantamine-induced behavioral recovery after sublethal excitotoxic lesions to cholinergic neurons of the rat medial septum. ***Behav Brain Res*** 2005, 163:33-41. (2.865/33)
40. Berghuis P, Dobszay MB, Wang X, Spano S, Ledda F, Sousa KM, Schulte G, Ernfors P, Mackie K, Paratcha G, Hurd YL, **Harkany T**. Endocannabinoids regulate interneuron migration and morphogenesis by transactivating the TrkB receptor. ***Proc Natl Acad Sci USA***, 2005, 102:19115-19120. (10.231/324)
41. Martin-Ibanez R, Jenstad M, Berghuis P, Edwards RH, Hioki H, Kaneko T, Mulder J, Canals JM, Ernfors P, Chaudhry F, **Harkany T**. Vesicular glutamate transporter 3 (VGLUT3) identifies spatially segregated excitatory terminals in the rat substantia nigra. ***Eur J Neurosci*** 2006, 23:1063-1070. (3.709/19)
42. Siegemund T, Paulke B-R, Schmiedel H, Bordag N, Hoffmann A, **Harkany T**, Tanila H, Kacza J, Härtig W. Thioflavins released from nanoparticles target fibrillar amyloid β in the hippocampus of APP/PS1 transgenic mice. ***Int J Devl Neurosci*** 2006, 4:195-201. (2.924/73)
43. Shemer I, Holmgren C, Min R, Fülöp L, Zilberter M, Sousa KM, Farkas T, Härtig W, Burnashev N, Tanila H, Zilberter Y*, **Harkany T***. Non-fibrillar β-amyloid abates spike-timing-dependent synaptic potentiation at excitatory synapses in layer 2/3 of the neocortex by targeting AMPA receptors. ***Eur J Neurosci*** 2006, 23:2035-2047. (3.709/101) | * *equal contributions*
44. Berghuis P, Agerman K, Dobszay MB, Minichiello L, **Harkany T**, Ernfors P. Brain-derived neurotrophic factor selectively regulates dendritogenesis of parvalbumin-containing interneurons in the main olfactory bulb through the PLCγ pathway. ***J Neurobiol*** 2006, 66:1437-1451. (4.209/55)
45. Berghuis P, Rajnicek AM, Morozov YM, Ross RA, Mulder J, Monory K, Marsicano G, Matteoli M, Canty A, Yanagawa Y, Rakic P, Lutz B, Mackie K, **Harkany T**. Hardwiring the brain: endocannabinoids shape neuronal connectivity, ***Science*** 2007, 316:1212-1216. (26.372/586)
46. Martin MG, Perga S, Trovó L, Rasola A, Holm P, Rantamäki T, **Harkany T**, Castrén E, Chiara F, Dotti CG. Cholesterol loss enhances TrkB signaling in hippocampal neurons aging in vitro. ***Mol Biol Cell*** 2008, 19:2101-2112. (6.028/102)
47. Mulder J*, Aguado T*, Keimpema E*, Barabas K, Ballaster Rosado CJ, Nguyen L, Monory K, Marsicano G, Di Marzo V, Hurd YL, Guillemot F, Mackie K, Lutz B, Guzman M, Lu H-C, Galve-Roperh I*, **Harkany T***. Endocannabinoid signaling controls pyramidal cell specification and long-range axon patterning. ***Proc Natl Acad Sci USA*** 2008, 105:8760-8765. (9.380/334) | * *equal contributions*
48. Grumelli C, Berghuis P, Pozzi D, Caleo M, Antonucci F, Bonanno G, Carmignoto G, Dobszay MB, **Harkany T**, Matteoli M, Verderio C. Calpain activity contributes to the control of SNAP-25 levels in neurons. ***Mol Cell Neurosci*** 2008, 39:314-323. (3.994/28)
49. Martens H, Weston MC, Boulland JL, Grønborg M, Grosche J, Kacza J, Hoffmann A, Matteoli M, Takamori S, **Harkany T**, Chaudhry F, Rosenmund C, Erck C, Jahn R, Härtig W. Unique luminal localization of vesicular GABA transporter carboxy-terminus allows for selective labelling of active cortical GABAergic synapses. ***J Neurosci*** 2008, 28:13125-13131. (7.452/93)
50. Fettisov SO, Bensing S, Mulder J, Le Maitre E, Hulting A-L, **Harkany T**, Ekwall O, Sköldberg F, Husebye E, Perheentupa J, Rorsman F, Kampe O, Hökfelt T. Autoantibodies in autoimmune polyglandular syndrome type I patients react with major brain neurotransmitter systems. ***J Comp Neurol*** 2009, 513:1-20; cover image: 513(1): spc1. (3.718/24)
51. Minkeviciene R, Rheims S, Dobszay MB, Zilberter M, Hartikainen J, Fülöp L, Penke B, Zilberter Y, **Harkany T**, Pitkänen A, Tanila H. Amyloid β-induced neuronal hyperexcitability triggers progressive epilepsy. ***J Neurosci*** 2009, 29:3453-3462. (7.178/681)
52. Jenstad M, Quazi AZ, Zilberter M, Haglerød C, Berghuis P, Saddique N, Goiny M, Buntup D, Ottersen OP, Davanger S, Haug F-MS, Barnes CA, McNaughton BL, Storm-Mathisen J, **Harkany T**, Chaudhry FA. System A transporter SAT2 mediates replenishment of dendritic glutamate pools controlling retrograde signaling by glutamate. ***Cereb Cortex*** 2009, 19:1092-1106. (6.979/89)

53. Rheims S, Holmgren CD, Chazal G, Mulder J, **Harkany T**, Zilberter T, Zilberter Y. GABA action in immature neocortical neurons directly depends on the availability of ketone bodies. ***J Neurochem*** 2009, 110:1330-1338. (3.999/98)
54. Zilberter M, Holmgren C, Shemer I, Silberberg G, Grillner S, **Harkany T***, Zilberter Y*. Input specificity and dependence of spike timing-dependent plasticity on preceding postsynaptic activity at unitary connections between neocortical layer 2/3 pyramidal cells. ***Cereb Cortex*** 2009, 19:2308-2320. (6.979/47) | * *equal contributions*
55. Mulder J, Zilberter M, Spence L, Tortoriello G, Uhlen M, Yanagawa Y, Aujard F, Hökfelt T*, **Harkany T***. Secretagogin is a Ca^{2+}-binding protein specifying telencephalic neurons. ***Proc Natl Acad Sci USA*** 2009, 106:22492-22497. (9.432/68) | * *equal contributions*
56. Solbu TT, Bjørkmo M, Berghuis P, **Harkany T**, Chaudhry FA. SAT1, a glutamine transporter, is preferentially expressed in GABAergic neurons. ***Front Neuroanat*** 2010, 4:1239. (3.068/69)
57. Mulder J, Spence L, Tortoriello G, DiNieri JA, Uhlén M, Shui B, Kotrlikoff MI, Yanagawa Y, Aujard F, Hökfelt T, Hurd YL, **Harkany T**. Secretagogin is a Ca^{2+}-binding protein identifying prospective extended amygdala neurons in the developing mammalian telencephalon. ***Eur J Neurosci*** 2010, 31:2166-2177. (3.658/38)
58. Gupta A, Mulder J, Gomes I, Rozenfeld R, Bushlin I, Ong E, Lim M, Maillet E, Junek M, Cahill CM, **Harkany T**, Devi LA. Increased abundance of opioid receptor heteromers after chronic morphine administration. ***Sci Signal*** 2010, 3:ra54. (6.354/248)
59. Usoskin D, Zilberter M, Linnarsson S, Hjerling-Leffler J, Uhlén P, **Harkany T**, Ernfors P. *En masse* in vitro functional profiling of the axonal mechanosensitivity of sensory neurons. ***Proc Natl Acad Sci USA*** 2010, 107:16336-16341. (9.771/22)
60. Keimpema E, Barabas K, Morozov YM, Tortoriello G, Torii M, Cameron G, Yanagawa Y, Watanabe M, Mackie K, **Harkany T**. Differential subcellular recruitment of monoacylglycerol lipase generates spatial specificity of 2-arachidonoyl glycerol signalling during axonal pathfinding. ***J Neurosci*** 2010, 30:13992-14007. (7.271/119)
61. Halleskog C, Mulder J, Dahlström J, Mackie K, Hortobagyi T, Tanila H, Puli LK, Färber K, **Harkany T**, Schulte G. WNT signalling in activated microglia is proinflammatory. ***Glia*** 2011, 59:119-31. (4.820/221)
62. Mulder J, Zilberter M, Pasquare S, Alpár A, Schulte G, Ferreira SG, Köfalvi A, Martín-Moreno AM, Keimpema E, Tanila H, Watanabe M, Mackie K, Hortobágyi T, de Ceballos ML, **Harkany T**. Molecular reorganization of endocannabinoid signalling in Alzheimer's disease. ***Brain*** 2011, 134:1041-1060. (9.457/197)
63. Farkas S, Nagy K, Palkovits M, Kovács GG, Jia Z, Donohue S, Pike V, Halldin C, Máthé D, **Harkany T**, Gulyás B, Csiba L. [^{125}I]SD-7015 reveals fine modalities of CB_1 cannabinoid receptor density in the prefrontal cortex during progression of Alzheimer's disease. ***Neurochem Int*** 2012, 60:286-291. (2.659/38)
64. Antonucci F, Alpar A, Kacza J, Caleo M, Verderio C, Giani A, Martens H, Chaudhry F, Allegra M, Grosche J, Michalski D, Erck C, Hoffmann A, **Harkany T***, Matteoli M*, Härtig W. Cracking down on inhibition: selective removal of GABAergic interneurons from hippocampal networks. ***J Neurosci*** 2012, 32:1989-2001. (6.908/56) | **shared senior authorship*
65. Farkas S, Nagy K, Jia Z, **Harkany T**, Palkovits M, Donohou SR, Pike VW, Halldin C, Máthé D, Csiba L, Gulyás B. The decrease of dopamine D2/D3 receptor densities in the putamen and nucleus caudatus goes parallel with maintained levels of CB_1 cannabinoid receptors in Parkinson's disease: A preliminary autoradiographic study with the selective dopamine D2/D3 antagonist [^{3}H]raclopride and the novel CB_1 inverse agonist [^{125}I]SD7015. ***Brain Res Bull*** 2012, 87:504-510. (2.935/24)
66. Attems J, Alpar A, Spence L, McParland S, Heikenwalder M, Uhlén M, Tanila H, Hökfelt T*, **Harkany T***, Clusters of secretagogin-espressing neurons in in the aged human olfactory tract lack terminal differentiation. ***Proc Natl Acad Sci USA*** 2012, 109:6259-6264. (9.737/27) | * *equal contributions*
67. Shi TJS, Xiang Q, Zhang M, Hammarberg H, Mulder J, Fried K, Wagner L, Uhlen M, **Harkany T**, Hökfelt T. Secretagogin is expressed in sensory CGRP neurons and in spinal cord of mouse and complements other calcium-binding proteins, with a note on rat and human. ***Mol Pain*** 2012, 8:80. (3.774/35)
68. Keimpema E, Tortoriello G, Alpar A, Capsoni S, Arisi I, Cattaneo A, Doherty P, Mackie K, **Harkany T**. Nerve growth factor scales endocannabinoid signaling by regulating monoacylglycerol lipase turnover in developing cholinergic. ***Proc Natl Acad Sci USA*** 2013, 110:1935-1940. (9.809/48)
69. Lendvai D, Morawski M, Negyessi L, Gati G, Jäger C, Baksa G, Glasz T, Attems J, Tanila H, Arendt T, **Harkany T**, Alpar A. Neurochemical mapping of the human hippocampus reveals perisynaptic matrix around functional synapses in Alzheimer's disease. ***Acta Neuropathol*** 2013, 125:215-229. (9.777/89)
70. Zilberter M, Ivanov A, Ziyatdinova S, Mukhtarov M, Malkov A, Alpár A, Tortoriello G, Botting CH, Fülöp L, Osypov AA, Pitkänen A, Tanila H, Harkany T, Zilberter Y. Dietary energy substrates reverse early neuronal hyperactivity in a mouse model of Alzheimer's disease. ***J Neurochem*** 2013, 125:157-171. (4.244/87)
71. Keimpema E, Alpar A, Howell F, Malenczyk K, Hurd YL, Watanabe M, Sakimura K, Kano M, Doherty P, **Harkany T**. Diacylglycerol lipase α manipulation reveals developmental roles for intercellular endocannabinoid signaling ***Sci. Rep.*** 2013, 3:2093. (5.078/33)
72. Tortoriello G, Rhodes BP, Takacs SM, Stuart JM, Basnet A, Raboune S, Widlanski TS, Doherty P, **Harkany T***, Bradshaw HB*. Targeted lipidomics in Drosophila melanogaster identifies novel 2-monoacylglycerols and N-acyl amides. ***Plos One*** 2013, 8(7): e67865. | * *equal contributions* (3.534/82)
73. Malenczyk K, Jazurek M, Keimpema E, Janikiewicz J, Mackie K, Di Marzo V, Redowicz

MJ, **Harkany T***, Dobrzyn A*. CB_1 cannabinoid receptors couple to focal adhesion kinase to control insulin release. ***J Biol Chem*** 2013, 288:32685-32699. | * *equal contributions* (4.6/72)

Highlighted in SciBX (Science.Business eXchange)'s "The Distillery" (Nature Publishing Group): SciBX 6(44); doi:10.1038/scibx.2013.1256; Published online Nov. 14, 2013

74. Keimpema E, Zheng K, Barde SS, Berghuis P, Dobszay MB, Schnell R, Mulder J, Luiten PGM, Xu ZD, Runesson J, Langel U, Lu B, Hökfelt T*, **HarkanyT***. GABAergic terminals are a source of galanin to modulate cholinergic neuron development in the neonatal brain. ***Cerebral Cortex*** 2014, 24: 3277-3288. | * *equal contributions* (8.305/13)

75. Tortoriello G, Morris CV, Alpar A, Fuzik J, Shirran SL, Calvigioni D, Keimpema E, Botting CH, Reinecke K, Herdegen T, Courtney M, Hurd YL, **Harkany T**. Miswiring the brain: Δ^9-tetrahydrocannabinol disrupts cortical connectivity by induction of a SCG10/stathmin-2 degradation pathway, ***EMBO Journal*** 2014, 33:668-685. (10.434/215)

76. Zhang MD, Tortoriello G, Hsueh B, Tomer R, Ye L, Mitsios N, Borgius L, Grant G, Kiehn O, Watanabe M, Uhlén M, Mulder J, Deisseroth K, **Harkany T***, Hökfelt T*. Neuronal calcium-binding proteins 1/2 localize to dorsal root ganglia and excitatory spinal neurons and are regulated by nerve injury. ***Proc Natl Acad Sci USA*** 2014, 111:E1149-1158. | **equal contributions* (9.674/72)

77. Gati G, Lendvai D, Hökfelt T, **Harkany T**, Alpar A. Revival of calcium-binding proteins for neuromorphology: secretagogin typifies distinct cell populations in the avian brain. ***Brain Behav Evol*** 2014, 83:82-92. (2.013/13)

78. Iannotti FA, Silvestri C, Mazzarella E, Martella A, Calvigioni D, Piscitelli F, Ambrosino P, Petrosino S, Czifra G, Bíró T, **Harkany T**, Taglialatela M, Di Marzo V. The endocannabinoid 2-AG controls skeletal muscle cell differentiation via CB_1 receptor-dependent inhibition of Kv7 channels. ***Proc Natl Acad Sci USA*** 2014, 111:E2472-E2481. (9.674/85)

79. Alpár A, Tortoriello G, Calvigioni D, Niphakis MJ, Milenkovic I, Bakker J, Cameron GA, Hanics J, Morris CV, Fuzik J, Kovacs GG, Cravatt BF, Parnavelas JG, Andrews WD, Hurd YL, Keimpema E, **Harkany T**. Endocannabinoids modulate cortical development by configuring Slit2/Robo1 signalling. ***Nat Commun*** 2014, 5:4421. (11.47/81)

80. Ferreira SG, Gonçalves FQ, Marques JM, Tomé AR, Rodrigues RJ, Nunes-Correia I, Ledent C, **Harkany T**, Venance L, Cunha RA, Köfalvi A. Presynaptic A_2A adenosine receptors dampen CB_1 cannabinoid receptor-mediated inhibition of corticostriatal glutamatergic transmission. ***Br J Pharmacol*** 2015, 172:1074-1086. (5.259/54)

81. Romanov R, Alpar A, Zhang MD, Zeisel A, Calas A, Landry M, Fuszard M, Shirran SL, Schnell R, Dobolyi A, Olah M, Spence L, Mulder J, Martens H, Palkovits M, Uhlen M, Sitte HH, Botting CH, Wagner L, Linnarsson S, Hökfelt T*, **Harkany T***. A secretagogin locus of the mammalian hypothalamus controls stress hormone release. ***EMBO Journal*** 2015, 34:36-54. | **shared authorship* (9.643/73)

82. Ádori C, Glück L, Barde S, Yoshitake T, Kovacs GG, Mulder J, Maglóczky Z, Havas L, Bölcskei K, Mitsios N, Uhlén M, Szolcsányi J, Kehr J, Rönnbäck A, Schwartz T, Rehfeld JF, **Harkany T**, Palkovits M, Schulz S, Hökfelt T. Critical role of somatostatin receptor 2 in the vulnerability of the central noradrenergic system: new aspects on Alzheimer's disease. ***Acta Neuropathol*** 2015, 129:541-563. (11.36/43)

83. Khatibi Shahidi M, Krivanek J, Kaukua N, Ernfors P, Hladik L, Kostal V, Masich S, Hampl A, Chubanov V, Gudermann T, Romanov RA, **Harkany T**, Adameyko I, Fried K. Three-dimensional imaging reveals new compartments and structural adaptations in odontoblasts. ***J Dent Res*** 2015, 94:945-954. (4.602/33)

84. Penz OK, Fuzik J, Kurek AB, Romanov R, Larson J, Park TJ, **Harkany T***, Keimpema E*. Protracted brain development in a rodent model of extreme longevity. ***Sci Rep*** 2015, 5:11592. | **shared senior authorship* (5.228/58)

85. Valladolid-Acebes I, Daraio T, Brismar K, **Harkany T**, Ögren SO, Hökfelt TG, Bark C. Replacing SNAP-25b with SNAP-25a expression results in metabolic disease. ***Proc Natl Acad Sci USA*** 2015, 112:E4326-4335. (9.423/30)

86. Bitencourt RM, Alpár A, Cinquina V, Ferreira SG, Pinheiro BS, Lemos C, Ledent C, Takahashi RN, Sialana FJ, Lubec G, Cunha RA, **Harkany T**, Köfalvi A. Lack of presynaptic interaction between glucocorticoid and CB_1 cannabinoid receptors in GABA- and glutamatergic terminals in the frontal cortex of laboratory rodents. ***Neurochem Int*** 2015, 90:72-84. (3.385/13)

87. Malenczyk K, Keimpema E, Piscitelli F, Calvigioni D, Björklund P, Mackie K, Di Marzo V, Hökfelt TG, Dobrzyn A, **Harkany T**. Fetal endocannabinoids orchestrate the organization of pancreatic islet microarchitecture. ***Proc Natl Acad Sci USA*** 2015, 112:E6185-E6194. (9.423/49)

88. Tesoriero C, Codita A, Zhang MD, Cherninsky A, Karlsson H, Grassi-Zucconi G, Bertini G, **Harkany T**, Ljungberg K, Liljeström P, Hökfelt TG, Bentivoglio M, Kristensson K. H1N1 influenza virus induces narcolepsy-like sleep disruption and targets sleep-wake regulatory neurons in mice. ***Proc Natl Acad Sci USA*** 2015, 113:E368-377. (9.423/89)

89. Guggenhuber S, Alpar A, Chen R, Schmitz N, Wickert M, Mattheus T, Harasta AE, Purrio M, Kaiser N, Elphick MR, Monory K, Kilb W, Luhmann HJ, **Harkany T**, Lutz B, Klugmann M. Cannabinoid receptor-interacting protein Crip1a modulates CB_1 receptor signaling in mouse hippocampus. ***Brain Struct Funct*** 2016, 221:2061-2074. (4.698/41)

90. Fuzik J, Zeisel A, Mate Z, Calvigioni D, Yanagawa Y, Szabo G, Linnarsson S, **Harkany T**. Integration of electrophysiological recordings with single-cell RNA-seq data identifies neuronal subtypes. ***Nat Biotech*** 2016, 34:176-183. (41.667/359)

91. Zhang MD, Barde S, Szodorai E, Josephson A, Mitsios N, Watanabe M, Attems J, Lubec G, Kovács GG, Uhlén M, Mulder J, **Harkany T***, Hökfelt T*. Comparative anatomical distribution of

neuronal calcium-binding protein (NECAB) 1 and -2 in rodent and human spinal cord. ***Brain Struct Funct*** 2016, 221:3803-3823. | **shared senior authorship* (4.698/22)

92. Marques S, Zeisel A, Codeluppi S, van Bruggen D, Falcao AM, Hochgerner H, Romanov RA, Gyllborg D, Häring M, Manchado AM, La Manno G, Lönnerberg P, Rezayee F, Ernfors P, Arenas E, Hjerling-Leffler J, **Harkany T**, Linnarsson S, Castelo-Branco G. Oligodendrocyte heterogeneity in the mouse central nervous system. ***Science*** 2016, 352:1326-1329. (37.205/860)
93. Agersnap M, Zhang MD, **Harkany T**, Hökfelt T, Rehfeld JF. Nonsulfated cholecystokinins in cerebral neurons. ***Neuropeptides*** 2016, 60:37-44. (2.726/14)
94. Zhang MD, Barde S, Yang T, Lei B, Eriksson LI, Mathew JP, Andreska T, Akassoglou K, **Harkany T**, Hökfelt TG, Terrando N. Orthopedic surgery modulates neuropeptides and BDNF expression at the spinal and hippocampal levels. ***Proc Natl Acad Sci USA*** 2016, 113:E6686-E6695. (9.661/72)
95. Blanchart A, Fernando R, Häring M, Assaife-Lopes N, Romanov RA, Andäng M, **Harkany T**, Ernfors P. Endogenous $GABA_A$ receptor activity suppresses glioma growth. ***Oncogene*** 2017, 36:777-786. (6.854/59)
96. Li J, Casteels T, Frogne T, Ingvorsen C, Honoré C, Courtney M, Huber KV, Schmitner N, Kimmel RA, Romanov RA, Sturtzel C, Lardeau CH, Klughammer J, Farlik M, Sdelci S, Vieira A, Avolio F, Briand F, Baburin I, Májek P, Pauler FM, Penz T, Stukalov A, Gridling M, Parapatics K, Barbieux C, Berishvili E, Spittler A, Colinge J, Bennett KL, Hering S, Sulpice T, Bock C, Distel M, **Harkany T**, Meyer D, Superti-Furga G, Collombat P, Hecksher-Sørensen J, Kubicek S. Artemisinins target $GABA_A$ receptor signaling and impair α cell identity. ***Cell*** 2017, 168:86-100. (31.398/351)
97. Romanov RA, Zeisel A, Bakker J, Girach F, Hellysaz A, Tomer R, Alpár A, Mulder J, Clotman F, Keimpema E, Hsueh B, Crow AK, Martens H, Schwindling C, Calvigioni D, Bains JS, Máté Z, Szabó G, Yanagawa Y, Zhang MD, Rendeiro A, Farlik M, Uhlén M, Wulff P, Bock C, Broberger C, Deisseroth K, Hökfelt T, Linnarsson S, Horvath TL, **Harkany T**. Molecular interrogation of hypothalamic organization reveals distinct dopamine neuronal subtypes. ***Nat Neurosci*** 2017, F20:176-188. (19.912/378)
98. Hanics J, Szodorai E, Tortoriello G, Malenczyk K, Keimpema E, Lubec G, Hevesi Z, Lutz MI, Kozsurek M, Puskár Z, Tóth ZE, Wagner L, Kovács GG, Hökfelt TG, **Harkany T***, Alpár A*. Secretagogin-dependent matrix metalloprotease-2 release from neurons regulates neuroblast migration. ***Proc Natl Acad Sci USA*** 2017, 114:E2006-E2015. | **shared senior authorship* (9.504/27)
99. Calvigioni D, Mate Z, Fuzik J, Girach F, Zhang MD, Varro A, Beiersdorf J, Schwindling C, Yanagawa Y, Dockray GJ, McBain CJ, Hökfelt T, Szabo G, Keimpema E, **Harkany T**. Functional differentiation of cholecystokinin-containing interneurons destined for the cerebral cortex. ***Cerebral Cortex*** 2017, 27:2453-2468. (6.308/23)
100. Rivetti di Val Cervo P, Romanov RA, Spigolon G, Masini D, Martín-Montañez E, Toledo EM, La Manno G, Feyder M, Pifl C, Ng YH, Sánchez SP, Linnarsson S, Wernig M, **Harkany T**, Fisone G, Arenas E. Induction of functional dopamine neurons from human astrocytes in vitro and mouse astrocytes in a Parkinson's disease model. ***Nat Biotechnol*** 2017, 35:444-452. (35.724/274)
101. Peng C, Li L, Zhang MD, Bengtsson Gonzales C, Parisien M, Belfer I, Usoskin D, Abdo H, Furlan A, Häring M, Lallemend F, **Harkany T**, Diatchenko L, Hökfelt T, Hjerling-Leffler J, Ernfors P. miR-183 cluster scales mechanical pain sensitivity by regulating basal and neuropathic pain genes. ***Science*** 2017, 356:1168-1171. (41.058/115)
102. Malenczyk K, Girach F, Szodorai E, Storm P, Segerstolpe Å, Tortoriello G, Schnell R, Mulder J, Romanov RA, Borók E, Piscitelli F, Di Marzo V, Szabó G, Sandberg R, Kubicek S, Lubec G, Hökfelt T, Wagner L, Groop L, **Harkany T**. A TRPV1-to-secretagogin regulatory axis controls pancreatic β-cell survival by modulating protein turnover. ***EMBO J*** 2017, 36:2107-2125. (10.557/52)
103. Drexel M, Romanov RA, Wood J, Weger S, Heilbronn R, Wulff P, Tasan RO, **Harkany T**, Sperk G. Selective silencing of hippocampal parvalbumin interneurons induces development of recurrent spontaneous limbic seizures in mice. ***J Neurosci*** 2017, 37:8166-8179. (5.971/71)
104. Milenkovic I, Stojanovic T, Aronica E, Fülöp L, Bozsó Z, Máté Z, Yanagawa Y, Adle-Biassette H, Lubec G, Szabó G, **Harkany T**, Kovács GG, Keimpema E. $GABA_A$ receptor subunit deregulation in the hippocampus of human foetuses with Down syndrome. ***Brain Struct Funct*** 2018, 223:1501-1518. (4.231/14)
105. Romanov RA, Lasher RS, High B, Savidge LE, Lawson A, Rogachevskaja OA, Zhao H, Rogachevsky VV, Bystrova MF, Churbanov GD, Adameyko I, **Harkany T**, Yang R, Kidd GJ, Marambaud P, Kinnamon JC, Kolesnikov SS, Finger TE. Chemical synapses without synaptic vesicles: Purinergic neurotransmission through a CALHM1 channel-mitochondrial signaling complex. ***Sci Signal*** 2018, 11(529). pii: eaao1815. (6.565/75)
106. Zhang MD, Su J, Adori C, Cinquina V, Malenczyk K, Girach F, Peng C, Ernfors P, Löw P, Borgius L, Kiehn O, Watanabe M, Uhlén M, Mitsios N, Mulder J, **Harkany T***, Hökfelt T*. Ca^{2+}-binding protein NECAB2 facilitates inflammatory pain hypersensitivity. ***J Clin Invest*** 2018, 128:3757-3768. | **equal contributions* (12.281/18)
107. Malenczyk K, Szodorai E, Schnell R, Lubec G, Szabó G, Hökfelt T, **Harkany T.** Secretagogin protects Pdx1 from proteasomal degradation to control a transcriptional program required for β cell specification. ***Mol Metab*** 2018, 14:108-120. (6.181/20)
108. Alpár A, Zahola P, Hanics J, Hevesi Z, Korchynska S, Benevento M, Pifl C, Zachar G, Perugini J, Severi I, Leitgeb P, Bakker J, Miklosi AG, Tretiakov E, Keimpema E, Arque G, Tasan RO, Sperk G, Malenczyk K, Máté Z, Erdélyi F, Szabó G, Lubec G, Palkovits M, Giordano A, Hökfelt TG, Romanov RA, Horvath TL, **Harkany T**. Hypothalamic CNTF volume transmission shapes

cortical noradrenergic excitability upon acute stress. ***EMBO J*** 2018, 37. pii: e100087. (11.227/40)

109. Cohen M, Giladi A, Gorki AD, Solodkin DG, Zada M, Hladik A, Miklosi A, Salame TM, Halpern KB, David E, Itzkovitz S, **Harkany T**, Knapp S, Amit I. Lung single-cell signaling interaction map reveals basophil role in macrophage imprinting. ***Cell*** 2018, 175:1031-1044.e18. (36.216/324)
110. Korchynska S, Lutz MJ, Borók E, Pammer J, Cinquina V, Fedirko N, Irving AJ, Mackie K, **Harkany T*,** Keimpema E*[3]. GPR55 controls functional differentiation of self-renewing epithelial progenitors for salivation. ***JCI Insight*** 2019, 4:pii: 122947. | **equal contributions* (6.205/6)
111. Qureshi T, Sørensen C, Berghuis P, Jensen V, Dobszay MB, Farkas T, Dalen KT, Guo C, Hassel B, Utheim TP, Hvalby Ø, Hafting T, **Harkany T**, Fyhn M, Chaudhry FA. The glutamine transporter Slc38a1 regulates GABAergic neurotransmission and synaptic plasticity. ***Cereb Cortex*** 2019, 29:5166-5179. (5.043/24)
112. Zahola P, Hanics J, Pintér A, Máté Z, Gáspárdy A, Hevesi Z, Echevarria D, Adori C, Barde S, Törőcsik B, Erdélyi F, Szabó G, Wagner L, Kovacs GG, Hökfelt T, **Harkany T**, Alpár A. Secretagogin expression in the vertebrate brainstem with focus on the noradrenergic system and implications for Alzheimer's disease. ***Brain Struct Funct*** 2019, 224:2061-2078. (3.298/14)
113. Fuzik J, Rehman S, Girach F, Miklosi AG, Korchynska S, Arque G, Romanov RA, Hanics J, Wagner L, Meletis K, Yanagawa Y, Kovacs GG, Alpár A, Hökfelt TGM, **Harkany T**. Brain-wide genetic mapping identifies the indusium griseum as a prenatal target of pharmacologically-unrelated psychostimulants. ***Proc Natl Acad Sci USA*** 2019, 116:25958-25967. (9.412/13)
114. Korchynska S, Krassnitzer M, Malenczyk K, Prasad RB, Tretiakov EO, Rehman S, Cinquina V, Gernedl V, Farlik M, Petersen J, Hannes S, Schachenhofer J, Reisinger SN, Zambon A, Asplund O, Artner I, Keimpema E, Lubec G, Mulder J, Bock C, Pollak DD, Romanov RA, Pifl C, Groop L, Hökfelt TGM, **Harkany T**. Life-long impairment of glucose homeostasis upon prenatal exposure to psychostimulants. ***EMBO J*** 2020, 39:e100882. (11.598/11)
115. Cinquina V, Calvigioni D, Farlik M, Halbritter F, Gernedl V, Shirran SL, Fuszard MA, Botting CH, Poullet P, Piscitelli F, Máté Z, Szabó G, Yanagawa Y, Kasper S, Di Marzo V, Mackie K, McBain CJ, Bock C, Keimpema E, **Harkany T**. Life-long epigenetic programming of cortical architecture by maternal 'Western' diet during pregnancy. ***Mol Psychiatry*** 2020, 25:22-36. (15.992/35)
116. Romanov RA, Tretiakov EO, Kastriti ME, Zupancic M, Häring M, Korchynska S, Popadin K, Benevento M, Rebernik P, Lallemand F, Nishimori K, Clotman F, Andrews WD, Parnavelas JG, Farlik M, Bock C, Adameyko I, Hökfelt T, Keimpema E, **Harkany T.** Molecular design of hypothalamus development. ***Nature*** 2020, 582(7811):246-252. (49.962/97)
117. Orthofer M, Valsesia A, Mägi R, Kaczanowska J, Kozieradzki I, Wang QP, Leopoldi A, Cikes D, Zopf L, Tretiakov EO, Demetz E, Hilbe R, Boehm A, Ticevic M, Nõukas M, Jais A, Spirk K, Amann S, Lepamets M, Clark T, Neumayr C, Arnold C, Dou Z, Kuhn V, Novatchkova M, Cronin SJF, Tietge UJF, Müller S, Pospisilik JA, Nagy V, Tancevski I, Hui CC, Lazovic J, Kiefer FW, Neely GG, Esterbauer H, Hagelkrüys A, **Harkany T**, Haubensak W, Metspalu A, Hager J, Gheldof N, Penninger JM. Identification of ALK in thinness. ***Cell*** 2020, 181(6):1246-1262.e22. (41.594/69)
118. Johard H, Omelyanenko A, Fei G, Zilberter M, Dave Z, Abu-Youssef R, Schmidt L, Harisankar A, Vincent CT, Walfridsson J, Nelander S, **Harkany T**, Blomgren K, Andäng M. HCN channel activity balances quiescence and proliferation in neural stem cells and is a selective target for neuroprotection during cancer treatment. ***Mol Cancer Res*** 2020, 18:1522-1533. (5.852/5)
119. Stagkourakis S, Smiley KO, Williams P, Kakadellis S, Ziegler K, Bakker J, Brown RSE, **Harkany T**, Grattan DR, Broberger C. A neuro-hormonal circuit for paternal behavior controlled by a hypothalamic network oscillation. ***Cell*** 2020, 182:960-975.e15. (41.594/33)
120. Krivanek J, Soldatov RA, Kastriti ME, Chontorotzea T, Herdina AN, Petersen J, Szarowska B, Landova M, Matejova VK, Holla LI, Kuchler U, Zdrilic VI, Vijaykumar A, Balic A, Marangoni P, Klein OD, Neves VCM, Yianni V, Sharpe PT, **Harkany T**, Metscher BD, Bajénoff M, Mina M, Fried K, Kharchenko PV, Adameyko I. Dental cell type atlas reveals stem and differentiated cell types in mouse and human teeth. ***Nat Commun*** 2020, 11:4816. (14.914/122)
121. Beiersdorf J, Hevesi Z, Calvigioni D, Pyszkowski J, Romanov RA, Szodorai E, Lubec G, Shirran S, Botting CH, Kasper S, Guy GW, Gray R, Di Marzo V, Keimpema E, **Harkany T**. Adverse effects of Δ9-tetrahydrocannabinol on neuronal bioenergetics during postnatal development. ***JCI Insight*** 2020, 5:23. (8.315/12)
122. Hevesi Z, Romanov RA, Hanics J, Attila I, Zambon A, Pollak DD, Lendvai D, Schlett K, Palkovits M, **Harkany T**, Hökfelt TGM, Alpar A. Secretagogin gates fear responses by modulating glutamate receptors on amygdaloid PKCδ interneurons. ***Proc Natl Acad Sci USA*** 2021, 118:e1921123118. (11.205/4)
123. Tortoriello G, Beiersdorf J, Romani S, Williams G, Cameron GA, Mackie K, Williams MJ, Di Marzo V, Keimpema E, Doherty P*, **Harkany T*.** Genetic manipulation of sn-1-diacylglycerol lipase and CB1 cannabinoid receptor gain-of-function uncover neuronal 2-linoleoyl glycerol signaling in *Drosophila melanogaster*. ***Cannabis Cannabinoid Res*** 2021, 2:119-136. (5.8/13)
124. Saucisse N, Mazier W, Simon V, Binder E, Catania C, Bellocchio L, Romanov RA, Léon S, Matias I, Zizzari P, Quarta C, Cannich A, Meece K, Gonzales D, Clark S, Becker JM, Yeo GSH, Fioramonti X, Merkle FT, Wardlaw SL, **Harkany T**, Massa F,

[3] Erik Keimpema, Roman A. Romanov and Robert Schnell are junior group leaders/associate professors in the Harkany lab, and share correspondence on various papers.

Marsicano G, Cota D. Functional heterogeneity of POMC neurons relies on mTORC1 signaling. ***Cell Rep*** 2021; 37:109800. (9.423/22)

125. Steffens S, Bakker J, Glat M, Keimpema E, Pollak DD, Hökfelt T, **Harkany T**. 3D-printed design of a stereotaxic adaptor for the precision targeting of brain structures in infant mice. ***Eur J Neurosci*** 2022; 55:725-732. (3.4/2)
126. Hevesi Z, Gerges DA, Kapps S, Freire R, Schmidt S, Pollak DD, Schmetterer K, Frey T, Lang R, Winnicki W, Schmidt A, **Harkany T**, Wagner L. Preclinical establishment of a divalent vaccine against SARS-CoV-2. ***Vaccines*** (*Basel*) 2022; 10:516. (7.8/2)
127. Smedler E, Louhivuori L, Romanov RA, Masini D, Dehnisch Ellström I, Wang C, Caramia M, West Z, Zhang S, Rebellato P, Malmersjö S, Brusini I, Kanatani S, Fisone G, **Harkany T**, Uhlén P. Disrupted *Cacna1c* gene expression perturbs spontaneous Ca^{2+} activity causing abnormal brain development and increased anxiety. ***Proc Natl Acad Sci USA*** 2022; 119:e2108768119. (11.1/12)
128. Ahmed M, Kaur N, Cheng Q, Shanabrough M, Tretiakov EO, **Harkany T**, Horvath TL, Schlessinger J. A hypothalamic pathway for Augmentor α-controlled body weight regulation. ***Proc Natl Acad Sci USA*** 2022; 119:e2200476119. (11.1/8)
129. Zambon A, Cuenca Rico L, Herman M, Gundacker A, Telalovic A, Hartenberger LM, Kuehn R, Romanov RA, Hussaini SA, **Harkany T**, Pollak DD. Gestational immune activation disrupts hypothalamic neurocircuits of maternal care behavior. ***Mol Psychiatry*** 2022, 17:1-15. (11.0/6)
130. Korchynska S, Rebernik P, Pende M, Boi L, Alpár A, Tasan R, Becker K, Balueva K, Saghafi S, Wulff P, Horvath TL, Fisone G, Dodt HU, Hökfelt T, **Harkany T*,** Romanov RA*. A hypothalamic dopamine locus for psychostimulant-induced hyperlocomotion in mice. ***Nat Commun*** 2022, 13:5944. (16.6/7)
131. Glat M, Gundacker A, Cuenca Rico L, Czuczu B, Ben-Simon Y, **Harkany T*,** Pollak DD*. An accessory prefrontal cortex-thalamus circuit sculpts maternal behavior in virgin female mice. ***EMBO J*** 2022, 41:e111648. (11.4/4)
132. Krassnitzer M, Boisvert B, Beiersdorf J, **Harkany T***, Keimpema E*. Resident Astrocytes can Limit Injury to Developing Hippocampal Neurons upon THC Exposure. ***Neurochem Res*** 2023, 48:1242-1253.
133. Patthy Á, Hanics J, Zachar G, Kovács GG, **Harkany T**, Alpár A. Regional redistribution of CB1 cannabinoid receptors in human foetal brains with Down's syndrome and their functional modifications in $Ts65Dn^{+/+}$ mice. ***Neuropathol Appl Neurobiol*** 2023, 49:e12887.
134. Zupančič M, Tretiakov E, Máté Z, Erdélyi F, Szabó G, Clotman F, Hökfelt T, **Harkany T***, Keimpema E*. Brain-wide mapping of efferent projections of glutamate ($Onecut3^{+}$) neurons in the lateral mouse hypothalamus. ***Acta Physiol (Oxf)*** 2023, 238:e13973. (2)
135. Petersen J, Englmaier L, Artemov AV, Poverennaya I, Mahmoud R, Bouderlique T, Tesarova M, Deviatiiarov R, Szilvásy-Szabó A, Akkuratov EE, Pajuelo Reguera D, Zeberg H, Kaucka M, Kastriti ME, Krivanek J, Radaszkiewicz T, Gömöryová K, Knauth S, Potesil D, Zdrahal Z, Ganji RS, Grabowski A, Buhl ME, Zikmund T, Kavkova M, Axelson H, Lindgren D, Kramann R, Kuppe C, Erdélyi F, Máté Z, Szabó G, Koehne T, **Harkany T**, Fried K, Kaiser J, Boor P, Fekete C, Rozman J, Kasparek P, Prochazka J, Sedlacek R, Bryja V, Gusev O, Adameyko I. A previously uncharacterized factor associated with metabolism and energy (FAME/C14orf105/CCDC198/1700011H14Rik) is related to evolutionary adaptation, energy balance, and kidney physiology. ***Nat Commun*** 2023, 14:3092.
136. Caramia M, Romanov RA, Sideromenos S, Hevesi Z, Zhao M, Krasniakova M, Xu ZD, **Harkany T***, Hökfelt TGM*. Neuronal diversity of neuropeptide signaling, including galanin, in the mouse locus coeruleus. ***Proc Natl Acad Sci USA*** 2023, 120:e2222095120.
137. Benevento M, Alpár A, Gundacker A, Afjehi L, Balueva K, Hevesi Z, Hanics J, Rehman S, Pollak DD, Lubec G, Wulff P, Prevot V, Horvath TL, **Harkany T**. A brainstem-hypothalamus neuronal circuit reduces feeding upon heat exposure. ***Nature*** (*in press*) ID: 2022-08-13268E.
138. Hevesi Z, Bakker J, Tretiakov EO, Adori C, Barde S, Krausgruber T, Ladstätter S, Bock C, Hökfelt T, **Harkany T**. Transient galanin expression shapes peripheral-to-central connectivity in the somatosensory thalamus during whisker development. ***Nat Commun*** (*in press*) ID: NCOMMS-23-15769B.
139. Szodorai E, Hevesi Z, Wagner L, Hökfelt T, **Harkany T***, Schnell R*. A hydrophonic groove in secretagogin allows for alternate interactions with SNAP-25 and syntaxin-4 in endocrine tissues. ***Proc Natl Acad Sci USA*** (*in press*) ID: 2023-09211RR.
140. Zupančič M, Keimpema E, Tretiakov EO, Bhandari P, Eder SJ, Lev I, Fietz SA, Härtig W, Zimmer M, Clotman F, **Harkany T.** Glutamate and GABA neurons share cascading Onecut3/NAV2-driven differentiation trajectories in the developing hypothalamus. ***Nat Commun*** (*in revision*) ID: NCOMMS-22-47020A-Z.
141. Cinquina V, Calvigioni D, Piscitelli F, Keimpema E, Di Marzo V, Verkhratsky V, **Harkany T**. Astrocytes modulate neuronal development by S100A6 signaling. ***Nat Commun*** (*in review*) & bioRxiv 2023:2023.09. 05.556314.
142. Cronin SJF, Yu W, Hale A, Licht-Mayer S, Crabtree MJ, Korecka JA, Tretiakov EO, Sealey-Cardona M, Somlyay M, Onji M, An M, Fox JD, Turnes BL, Gomez-Diaz C, da Luz Scheffer D, Cikes D, Nagy V, Weidinger A, Wolf A, Reither H, Chabloz A, Kavirayani A, Rao S, Andrews N, Latremoliere A, Costigan M, Douglas G, Freitas FC, Pifl C, Walz R, Konrat R, Mahad DJ, Koslov AV, Latini A, Isacson O, **Harkany T**, Hallett PJ, Bagby S, Woolf CJ, Channon KM, Je HS, Penninger JM. Crucial neuroprotective roles of the metabolite BH4 in dopaminergic neurons. *bioRxiv*. 2023:2023.05.08.539795.

Reviews, editorials & book chapters

1. Gulya K, Szikra J, Lengyel Z, **Harkány T**, Kása P. Interaction between the endogenous opioid system

and the aluminium content in rat striatum. ***Rec Adv Aging Sci*** (eds. Beregi E, Gergely IA, Rajczi K) Monduzzi: Bologna 1993, pp. 631-635. (1)

2. **Harkany T**, Luiten PGM. Experimental models of memory dysfunction. ***Clin Neurosci*** 1999, 52:223-224.
3. **Harkany T**, Hortobágyi T, Sasvári M, Kónya C, Penke B, Luiten PGM, Nyakas C. Neuroprotective approaches in experimental models of β-amyloid neurotoxicity: relevance to Alzheimer's disease. ***Prog Neuro-Psychopharmacol & Biol Psychiat*** 1999, 23:963-1008. (1.389/127; Chapter 1 of Ph.D. thesis [1999])
4. **Harkany T**, Penke B, Luiten PGM. β-Amyloid excitotoxicity in rat magnocellular nucleus basalis - effect of cortical deafferentation on cerebral blood flow regulation and implications for Alzheimer's disease. Vascular Factors in Alzheimer's disease: ***Ann NY Acad Sci*** 2000, 903:374-386. (1.381/46)
5. **Harkany T**, Ábrahám I, Kónya C, Nyakas C, Zarándi M, Penke B, Luiten PGM. Mechanisms of β-amyloid neurotoxicity: perspectives of pharmacotherapy. ***Rev Neurosci*** 2000, 11:329-382. (3.400/156)
6. Ábrahám IM, **Harkany T**, Horvath KM, Luiten PGM. Action of glucocorticoids on survival of nerve cells: promoting neurodegeneration or neuroprotection? ***J Neuroendocrinol*** 2001, 13:749-761. (2.580/156)
7. Penke B, **Harkany T**. Physiological role of amyloid precursor protein (APP) and β-amyloid peptides. In: ***Molecular Pathomechanisms and New Trends in Drug Research*** (eds. Keri, G and Toth, I) Taylor and Francis: London 2002, pp. 387-401.
8. Härtig W, Bauer A, Brauer K, Grosche J, Hortobágyi T, Penke B, Schliebs R, **Harkany T.** Functional recovery of cholinergic basal forebrain neurons under disease conditions: old problems, new solutions? ***Rev Neurosci*** 2002, 13:95-165. (3.861/60)
9. Mager PP, Penke B, Walter R, **Harkany T**, Härtig W. Pathological peptide folding in Alzheimer's disease and other conformational disorders. ***Curr Med Chem*** 2002, 9:1763-1780. (4.966/45)
10. Berghuis P, Dobszay MB, Martin-Ibanez R, Ernfors P, **Harkany T**. Turning the heterogeneous into homogeneous: studies with isolated GABAergic interneuron subsets. ***Int J Devl Neurosci*** 2004, 22:533-543. (1.520/23)
11. Zilberter Y, **Harkany T**, Holmgren CD. Dendritic release of retrograde messengers controls synaptic transmission in local neocortical networks. ***Neuroscientist*** 2005, 11:334-344. (4.458/46)
12. Zilberter Y, **Harkany T**. Classical neurotransmitters as retrograde messengers in layer 2/3 of the neocortex: emphasis on glutamate and GABA. In: ***Dendritic Transmitter Release*** (ed. M. Ludwig) Springer: Newark 2005, pp. 117-131.
13. **Harkany T**, Guzman M, Galve-Roperh I, Berghuis P, Devi LA, Mackie K. The emerging functions of endocannabinoid signaling during central nervous system development. ***Trends Pharmacol Sci*** 2007, 28:83-92. (9.610/445)
14. Berghuis P, Mackie K, **Harkany T**. Figs. 66 and 72. In: ***Pansajes Neuronales. Homenaje a Santiago Ramon y Cajal***. (eds. J. DeFelipe, H. Markram, J Wagensberg) Consejo Superior de Investigaciones Cientificas, Madrid, 2007.
15. **Harkany T**, Keimpema E, Barabas K, Mulder J. Endocannabinoid functions controlling neuronal specification during brain development. ***Mol Cell Endocrinol*** 2008, 286 1-2:S84-90. (3.611/211)
16. **Harkany T**, Mackie K, Doherty P. Wiring and firing neuronal networks: endocannabinoids take center stage. ***Curr Opin Neurobiol*** 2008, 18:338-345. (8.102/35)
17. Matteoli M, Pozzi D, Grumelli C, Condliffe S, Frassoni C, **Harkany T**, Verderio C. The synaptic split of SNAP-25: Different roles in glutamatergic and GABAergic neurons? ***Neuroscience*** 2008, 158:223-230. (3.556/45)
18. **Harkany T**, Guzmán M, Hurd YL. Endocannabinoid functions in neurogenesis, neuronal migration and specification. In: ***Cannabinoids and the Brain*** (ed. A. Köfalvi) Boston, MA: Springer: 2008, pp. 237-256. (3)
19. Irving AJ, McDonald N, **Harkany T**. CB_1 cannabinoid receptors: molecular biology, second messenger coupling and polarized trafficking in neurons. In: ***Cannabinoids and the Brain*** (ed. A. Köfalvi) Boston MA: Springer: 2008, pp. 59-73. (13)
20. Jutras-Aswad D, Dinieri JA, **Harkany T**, Hurd YL. Neurobiological consequences of maternal cannabis on human fetal development and its neuropsychiatric outcome. ***Eur Arch Psychiatry Clin Neurosci*** 2009, 259:395-412. (2.747/185)
21. **Harkany T**. HDAC9 links epigenetics to dendrite development (*Commentary* on Sugo *et al.*). ***Eur J Neurosci*** 2010, 31:1519-1520. (3.658/1)
22. Keimpema E, Mackie K, **Harkany T**. Molecular model of cannabis sensitivity in developing neuronal circuits. ***Trends Pharmacol Sci*** 2011, 32:551-561. (10.972/107)
23. **Harkany T**. Molecular mechanisms of neuronal specification (*Editorial*). ***Eur J Neurosci*** 2011, 34:1513-1515. (3.631)
24. Alpár A, Attems J, Mulder J, Hökfelt T, **Harkany T**. The renaissance of Ca^{2+}-binding proteins in the nervous system: secretagogin takes center stage. ***Cell Signal*** 2012, 24:378-387. (4.304/70)
25. Keimpema E, Straiker A, Mackie K, **Harkany T***, Hjerling-Leffler J. Sticking out of the crowd: the molecular identity and development of cholecystokinin-containing basket cells. ***J Physiol*** 2012, 590:703-714. (4.380/19) | * *corresponding author*
26. Alpar A, **Harkany T**. Orexin neurons use endocannabinoids to break obesity-induced inhibition. ***Proc Natl Acad Sci USA*** 2013, 110:9625-9626. (9.809/10)
27. Keimpema E, Calvigioni D, **Harkany T**. Endocannabinoid signals in the developmental programming of delayed-onset neuropsychiatric and metabolic illnesses. ***Biochem Soc Trans*** (2013) 41, 1569-1576. (3.238/29)
28. **Harkany T**, Zeilhofer HU, Cattaneo A. Neurotrophin and endocannabinoid interactions in the neurobiology of pain (editorial). ***Eur J Neurosci*** 2014, 39:331-333. (3.181/2)
29. Keimpema E, Hökfelt T, **Harkany T**, Doherty P. The molecular interplay between endocannabinoid

and neurotrophin signals in the nervous system and beyond. ***Eur J Neurosci*** 2014, 39:334-343. (3.181/16)

30. Calvigioni D, Hurd YL, **Harkany T**, Keimpema E. Neuronal substrates and functional consequences of prenatal cannabis exposure. ***Eur Child Adolesc Psychiatry*** 2014, 23:931-941. (3.336/143)
31. Maccarrone M, Guzmán M, Mackie K, Doherty P, **Harkany T**. Programming of neural cells by (endo)cannabinoids: from physiological rules to emerging therapies. ***Nat Rev Neurosci*** 2014, 15: 786-801. (31.427/297)
32. **Harkany T**, Hurd YL, Keimpema E. Endocannabinoids and fetal organ development: a conflict of misconstrued concepts and policies? ***Future Neurology*** 2015, 10:75-78. (1)
33. Alpár A, Di Marzo V, **Harkany T**. At the tip of an iceberg: prenatal marijuana and its possible relation to neuropsychiatric outcome in the offspring. ***Biol Psychiatry*** 2016, 79:e33-e45. (11.212/99)
34. Romanov RA, Alpár A, Hökfelt T, **Harkany T**. Molecular diversity of corticotropin-releasing hormone mRNA-containing neurons in the hypothalamus. ***J Endocrinol*** 2017, 232:R161-R172. (4.012/41)
35. **Harkany T**, Horvath TL. (S)Pot on mitochondria: cannabinoids disrupt cellular respiration to limit neuronal activity. ***Cell Metab*** 2017, 25:8-10. (20.565/36)
36. Miklosi AG, Del Favero G, Marko D, **Harkany T***, Lubec G*. Resolution matters: Correlating quantitative proteomics and nanoscale-precision microscopy for reconstructing synapse identity. (*Viewpoint*) ***Proteomics*** 2018, e1800139. | **shared corresponding authorship* (3.106/5)
37. Szodorai E, Bampali K, Romanov RA, Kasper S, Hökfelt T, Ernst M, Lubec G, **Harkany T**. Diversity matters: combinatorial information coding by $GABA_A$ receptor subunits during spatial learning and its allosteric modulation. ***Cell Signal*** 2018, 50:142-159. (3.388/7)
38. Alpár A, **Harkany T**. Novel insights into the spatial and temporal complexity of hypothalamic organization through precision methods allowing nanoscale resolution. ***J Intern Med***. 2018, 284(6):568-580. (6.051/5)
39. Alpár A, Benevento M, Romanov RA, Hökfelt T, **Harkany T**. Hypothalamic cell diversity: non-neuronal codes for long-distance volume transmission by neuropeptides. ***Curr Opin Neurobiol*** 2018, 56:16-23. (6.014/20)
40. Romanov RA, Alpár A, Hökfelt T, **Harkany T**. Unified classification of molecular, network, and endocrine features of hypothalamic neurons. ***Annu Rev Neurosci*** 2019, 42:1-26. (12.043/27)
41. Keimpema E, **Harkany T**, Alpár A. The p(l)ot thickens: cannabinoid receptors on astroglial mitochondria coordinate animal behaviors by regulating lactate availability for neurons. ***Signal Transduct Target Ther*** 2020, 5:189. (18.187)
42. Patthy A, Murai J, Hanics J, Pintér A, Zahola P, Hökfelt TGM, **Harkany T**, Alpár A. Neuropathology of the brainstem to mechanistically understand and to treat Alzheimer's disease. ***J Clin Med*** 2021, 10:1555. (4.242/9)
43. **Harkany T**, Cinquina V. Physiological rules of endocannabinoid action during fetal and neonatal brain development. ***Cannabis Cannabinoid Res*** 2021; 6:381-388. (5.8/4)
44. Keimpema E, Di Marzo V, **Harkany T**. Biological basis of cannabinoid medicines. ***Science*** 2021; 374(6574):1449-1450. (47.728/12)
45. RA Romanov, **T Harkany**. Neuronal heterogeneity in the paraventricular nucleus oft he hypothalamus as revealed by single-cell RNA-seq. ***Curr Opin Endo Metab Res*** 2022, 25:100366 (2)
46. Benevento M, Hökfelt T, **Harkany T**. Ontogenetic rules for the molecular diversification of hypothalamic neurons. ***Nat Rev Neurosci***. 2022, 23:611-627. (34.7/5)
47. **Harkany T**, Hökfelt T. Neuroglia: Function and Pathology by Alexei Verkhratsky and Arthur M. Butt. ***Acta Physiol (Oxf)***. 2023, 22:e14033.
48. Cinquina V, Keimpema E, Pollak DD, **Harkany T.** Adverse effects of gestational ω-3 and ω-6 polyunsaturated fatty acid imbalance on the programming of fetal brain development. ***J Neuroendocrinol*** 2023, doi: 10.1111/jne.13320.

Other publication types, outreach

1. Sasvari M, **Harkany T**, Nyakas C. Novelty-induced behavioral dysfunctioning correlates with the loss of Ca^{2+} homeostasis after chronic ethanol intoxication. ***Neurobiology*** 1997, 5:87-90. (1)
2. O'Mahony S, Noonan D, **Harkany T**, De Jong GI, Nyakas C, Leonard BE. Ifenprodil attenuates the loss of parietal cortical parvalbumin immunoreactivity after focal cerebral ischemia in the mouse. ***Neurobiology*** 1997, 5:79-82. (1)
3. **Harkany T**, Sasvári M, Vinczer P, Béres J Jr, Nyakas C. Antioxidant properties of a multicomponent trace-element mixture: prevention of ethanol-induced oxidative stress in the rat. (Krónikus alkohol kezelés pro-oxidáns hatásainak ellensúlyozása többkomponensű, szelént és vasat tartalmazó nyomelem keverékkel (TEP-201) patkányban). ***Egészségtudomány*** 1997, 41:348-359.
4. Zádor Z, Lacza Z, Benyó Z, **Harkany T**, Hortobágyi T. Apoptózis fokális agyi iszkémiában. (Apoptosis in focal brain ischemia.) ***Clin Neurosci/Ideggyogy Sz*** 2003, 56:216-228. (12)
5. Zádor Z, Benyó Z, Lacza Z, Hortobágyi T Sr, **Harkany T**, Hortobágyi T Jr. Neuroprotekció agyi iszkémiában – kételyek és remények. (Neuroprotection in brain ischemia – doubts and hopes.) ***Clin Neurosci/Ideggyog Sz*** 2004, 57:81-93. (22)

Teaching experience

Lectures, courses & practicals[4][5]

1998-2001:'**Animal physiology**', 4 weeks full time during four years (640 h); University of Groningen (co-ordinator: PGM Luiten).

1999-2001:'**Anatomy of the rat** (gross anatomy)', 2nd semester practical course, 3 days of seven hours per day for three years (63 h); University of Groningen (co-ordinator: PGM Luiten).

2000-2001:'**Brain anatomy**', 4th semester, 7 h per day for two groups, together 8 days (56 h); University of Groningen (co-ordinator: PGM Luiten).

2000-2001: '**Neuroprotection**', 5th semester, one day introduction and one day practical teaching for two groups, together four days per six hours per day for two years (24 h); University of Groningen (co-ordinator: PGM Luiten).

2003-2013: '**Structure and Function of the Cell: Intermediary metabolism**', 1st and 3rd semester, seminar for two groups (4-7 h/semester); Karolinska Institutet (co-ordinator: A Rökaeus).

2003-2007:'**Physiology of the Organ Systems**': 'Acid-base reactions', group practical, 1st and 3rd semester, two groups (3 h/semester); Karolinska Institutet (co-ordinator: A Rökaeus).

2005: '**Physiology B**': cellular signalling segment, lecture (2 h) Karolinska Institutet (organizer: C-J Sundberg).

2006: PBL project: **'Physiology of the Organ Systems'**, project work adviser. A 10-week problem-based learning project work on a topic relevant to the physiology course material; Karolinska Institutet (co-ordinator: A Rökaeus).

2008-2010: '**PY4302/AN4301: Developmental Neuroscience**': 'cortex development', lecture (1 h per fall semester); University of Aberdeen (co-ordinator: AM Rajnicek).

2008-2010: '**BM4004: Advanced molecules, membranes and cells**': 1) 'Neuronal diversity in the brain' and 2) 'Development of bi-directional synaptic communication in the brain' (2 h/fall semester); University of Aberdeen (co-ordinator: RH Scott).

2008-2012: '**EMBO Young Investigator PhD Course (EMBL, Heidelberg, Germany)**: Spotlights on current biology': seminars on 'Neurobiology' and/or 'Frontiers in Imaging', student supervision and course coordination (3-5 full days per year, 10 h/day); European Molecular Biology Organization, Heidelberg, Germany (organizer: G Wallon, EMBO deputy director).

2010: '**Brain repair – tinkering with brain damage**', postgraduate seminars on 1) 'Endocannabinoid signalling in Alzheimer's disease', 2) 'Dietary manipulations to decrease the susceptibility to brain damage', 3) 'Neurophysiology and neuroprotection' (3 h); University of Coimbra, Portugal (BEB PhD Programme; http://beb.cnbc.pt; organizers: I Araujo, R Cunha, A Köfalvi).

2012: '**Signal transduction in brain diseases**', postgraduate course 'Disrupted endocannabinoid signalling during brain development manifests in life-long behavioural and cognitive deficits.' (1.5 h; #1587, organizer: G. Fisone; Karolinska Institutet).

2013: '**Brain development and neurodevelopmental disorders**', postgraduate course 'Molecular model of cannabis sensitivity in developing neuronal circuits.' (1.0 h; #2605, organizer: R. Diaz Heijtz; Karolinska Institutet).

2014-2018: '**Basics of Neuroscience'**, postgraduate course 'Non-classical neurotransmitters, endocannabinoids' & 'Drug addiction' (2.0 hours; #M094, organizer: J. Berger; Medical University of Vienna).

Teaching remit (with reference to the courses above) and assessment

1998-2001: '**Animal physiology**': Theoretical and practical training (including intensive experimental work) with 2-3 undergraduate students on a pre-defined series of experiments. The research program was followed by written examination, as well as oral presentation of findings (15-20 min talks). *Responsibilities:* planning, supervision, experimentation, and course evaluation.

1999-2001: '**Anatomy of the rat** (gross anatomy)': Practical course for 1st year students in biomedical sciences. The course included anatomical demonstration and dissection of all major organ systems in mammals. *Responsibilities:* teaching, demonstration and tutorials, and correction and evaluation of students' drawings.

2000-2001: '**Brain anatomy**': Practical course for 2nd year students in biomedical sciences. The course material included characterization of major brain areas and nerves, connective pathways in brain and spinal cord, and functional description of particular structures. *Responsibilities:* demonstrations, guidance and supervision; correction and assessment of drawings.

2000-2001:'**Neuroprotection**': Theoretical introduction (day 1) to and experimental demonstration of state-of-the-art neuroprotection strategies (day 2), including pharmacotherapies of stroke and Alzheimer's disease for 2nd year students in biomedical sciences. *Responsibilities*: planning and performing wet lab experiments, as well as evaluation of written assays.

2003 - 2013: '**Structure and Function of the Cell: Intermediary metabolism**': group seminar on glucose metabolism and its hormonal regulation, Krebs cycle and mitochondrial respiratory chain. Description biochemical reactions.

2003-2007: '**Physiology of the Organ Systems**': 'Acid-base reactions': group practicals encompassing calculations and problem solving with regards to basic acid-base equations, pH calculations, molarity, and buffer capacity.

2005: '**Physiology B**': cellular signalling segment: group seminar on signal transduction pathways downstream from the CB_1 cannabinoid receptor, a 'prototypic' GPCR. *Responsibilities:* selection of the topic and lecturing.

[4] Written proof on details of commitments and teaching hours will be provided upon request. Teaching involvement that has taken place prior to 2005 has been verified during docentship control at Karolinska Institutet.

[5] Teaching times exclude preparation time.

2006:**'Physiology of the Organ Systems'**, project work adviser. A 10-week PBL project work on a topic relevant to the physiology course material. *Responsibilities:* PBL project selection, weekly control, guidance, (p-)review the final presentation.

2008-2010: '**PY4302/AN4301: Developmental Neuroscience**': 'cortex development', lecture on basic concepts of cortex development including neuronal specification, lamination, cell migration and axon growth. *Responsibilities:* selection of topic, preparation of presentation, contributing exam question and marking of written exam essays falling in the remit of the topic presented.

2008-2010: '**BM4004: Advanced molecules, membranes and cells**': 1) 'Neuronal diversity in the brain' and 2) 'Development of bi-directional synaptic communication in the brain'. Lectures include a brief history of neuroanatomy, histochemical techniques, functional and morphological classification of neurons, description of neuronal phenotypes, distinction between neurotransmitters and neuromodulators, synaptic vs. volume transmission, molecular requirements of anterograde and retrograde signalling at synapses, retrograde messengers, the pharmacology of retrograde signalling, developmental biology of retrograde signalling networks. *Responsibilities:* selection, preparation of presentation, contributing to exam questions and marking of written exam essays falling in the remit of the topic presented.

2008-2012: '**EMBO Young Investigator PhD Course (EMBL, Heidelberg, Germany)**: Spotlights on current biology': member of the organizing committee. Involved in selection of topics and establishing the course's program. Personal contribution with seminars on 'Neurobiology' and 'superresolution microscopy'. *Responsible* for selection of course material and presentation, participating in round table discussion about careers in science, and discussion of student presentations.

2010: '**Brain repair – tinkering with brain damage**': Setting the topic of seminars, collecting teaching materials, preparing lecture notes and presentations. *Responsibilities*: providing two original research articles to students for discussion and review.

2012: '**Signal Transduction in Brain Diseases**' No. 1587/Karolinska Institutet (coordinator: G. Fisone). *Responsibility:* classroom lecture.

2013: '**Brain development and neurodevelopmental disorders**', (Karolinska Institutet) *Responsibility:* classroom lecture.

2014-2018: '**Basics of Neuroscience'**, postgraduate course (Medical University of Vienna) *Responsibility:* classroom lecture comparing fast and volumetric intercellular communication, presynaptic control of neurotransmitter release, and molecular mechanisms and symptomatology of drug addiction.'

Nature and diversity of teaching

I am experienced with classroom lecturing, holding one-off sessions as well as seminar series, supervision of group projects – whether practical, theoretical or both -, classroom practicals, PBL, peer-directed, self-directed, or teacher-directed modes of learning/transmission, tutorials as well as one-on-one mentoring (see details of particular topics above).

Course evaluation

I am familiar with and have used CAS grade descriptors to mark student assays to determine their degree classes at the University of Aberdeen, United Kingdom. I have been involved in marking assays within the remits of developmental neuroscience (PY4302) as well as neurophysiology (BM4004) undergraduate degree courses. In case of divergent scoring by two independent lecturers, differences were resolved through face-to-face discussions of student achievements.

Development of educational knowledge

2021-2022: Member of the Education Committee, **CINP**.

2015: **Betreuung von PhD-Studierenden** (8 h), Issued by the Medizinische Universität Wien, Stabstelle Personalentwicklung.

2012: **Web-course for Ph.D. supervisors**. Issued by the Board of Postgraduate Education, (Karolinska Institutet).

2004: **Basic Course in Education for University Teachers** (Part 1): Special course on teaching in higher education including concepts and practice of teaching (Karolinska Institutet).

Example on planning, execution, and evaluation

Course: **EMBO Young Investigator Program, PhD. Course**

Place and time: Heidelberg (Germany), September 21-27, 2010

Number of students: 36 (selected from the whole of Europe)

Topic of presentation: **Frontiers in Imaging: Superresolution microscopy**

Planning: As member of the course organizing committee, I had been involved in planning the course material. This had been discussed at a meeting at EMBO (January 26, 2010) at which the course organizer (Dr. G. Wallon, EMBO) and six committee members mapped out a whole week of intense teaching for graduate students. We have taken the decision to present the most fascinating aspects of current biology through combining theoretical lectures with technical presentations. In 2010, my task was to present breakthroughs in optical imaging.

Preparation: I have contacted my colleagues at Zeiss Microscopy and Leica Microsystems to receive updates on experimental technologies expected to be introduced to the market shortly. I have received non-confidential technical training and marketing presentations with simple descriptions of current technologies. I have visited the OMX facility in Dundee to experience at first hand superresolution microscopy breaking the light diffraction limit. Subsequently, I have compiled my PowerPoint presentation of 22 slides for a period of 45 min. Since some of the slides were heavy on optical physics, I made certain that students had enough time to absorb relevant information.

Evaluation: This has consisted of student feedback as well as the opinions of other lecturers.

Evaluation of educational practice: My teaching is regularly monitored. 1) Student feedback is an integral

measure of the success of lecturing at the Karolinska Institutet. I have been evaluated at the end of each semester. These results have been discussed with the study rector of our teaching programs. 2) Similarly, students provide written feedback at the end of each course in Aberdeen, which is of significance in revising the course material for future semesters. Student feedback is particularly important as it greatly affects University rankings in the United Kingdom. Therefore, I have been regularly evaluating my teaching performance with respective course coordinators. 3) The EMBO YIP Ph.D course concludes with a student feedback session, the results of which are of significance when planning subsequent courses. 4) My doctoral students have been invited to provide 360º feedback annually as part of my personal development plan (being part of my leadership training).

Thoughts about my own professional input

a. The classical view of teaching implies a unidirectional transfer of information from the teacher to his/her students. In modern practice, however, the role of a teacher evolved into a facilitator of student understanding, structural thinking, and deep learning. In my view, a combination of the classical and modern teacher's roles may provide the ideal impact on student learning. Therefore, I strive to provide my students with a broad theoretical and experimental background of a given subject, e.g., in major areas of biology and medicine as preparation for their further studies, while promoting structural thinking, self-recognition of key facts and mechanisms, and self-achievement of organizing principles of biological and medical problems. Besides their continuously changing roles, teachers at state-of-the-art universities and research facilities are challenged by information overflow, which may also become a major inherent obstacle for students. Thus, I believe that our role as teachers is ever expanding and our ability to provide guidance for our students to make the right choices and decisions about background materials, to apply appropriate methods of data retrieval and analysis, and to build proper conclusions is of critical importance. Properly guiding our students can thus only be based on the teachers' willingness to continuously update and expand horizons of their knowledge. Fortunately, modern teaching practice facilitating higher-order thinking employs a variety of methods that promote active student participation and learning even in (large) lecture environments. These include, e.g., formation of randomly selected, cooperative learning groups, large group discussions encouraging students to ask questions in class and to reply to questions and argue with their peers, written feedbacks, and multiple forms of take-home assignments. In addition, a balanced, organized use of advanced infrastructure at hand (e.g., computer simulations, animations) can provide an environment raising student engagement and extend the periods of effective learning. Nevertheless, I firmly believe that the degree to which students engage in class and acquire novel information that later become integral parts of their active knowledge solely rests on the teacher's attitude not only towards teaching *per se*, but also to the particular topic, and his/her students.

b. My aim is to provide my students with current and valuable knowledge. To increase the impact of my teaching I plan to implement strategies to make better use of student errors to engage my class in constructive thinking by taking the role of a moderator rather than a teacher/presenter. I believe that my increasing experience in teaching allows me to better rely on improvisation in the future, as I think that good improvisation is crucial in making the best of interactive teaching. I also plan to implement coaching and feedback techniques I have recently acquired during one-on-one mentoring and appraisals. Question and comments from students can be a very good basis for reconstructing new and exciting ideas.