

EUROPASS CURRICULUM VITAE

03.09.2026.

PERSONAL INFORMATION

- **Name:** Dr. Balázs Zoltán Pál
 - **Home address:** 6/d Izsó St., Debrecen 4028, Hungary
 - **Work address:** 98 Nagyerdei Blvd., Debrecen 4012, Hungary
 - **Phone:** +36-30-967-1911
 - **E-mail:** pal.balazs@med.unideb.hu
 - **Place and date of birth:** Debrecen, 30.04.1975.
 - **Nationality:** Hungarian
 - **Profession / Current position:** Medical doctor, Associate professor, Head of research group
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RELEVANT PROFESSIONAL EXPERIENCE

- **2024 – present**
 - Position: Doctor of the Hungarian Academy of Sciences (DSc) / Head of Research Group
 - Institution: Department of Physiology, Faculty of Medicine, University of Debrecen (UD FM)
- **2018 – present**
 - Position: Associate professor
 - Institution: Department of Physiology, UD FM
- **2016 – present**
 - Position: Head of Workgroup (Neurophysiology Workgroup)
 - Institution: Department of Physiology, UD FM
 - Main duties: Leading and coordinating the scientific working group, currently employing 2 postdocs and 4 PhD students.
- **2011 – 2018**
 - Position: Assistant professor (Senior lecturer)
 - Institution: Department of Physiology, Medical and Health Science Center, University of Debrecen (UD MHSC)
- **2014 (6 weeks)**
 - Position: Visiting Scholar
 - Institution: CMBN, Rutgers University, New Jersey, USA (Supervisor: Laszlo Zaborszky)
- **2012 (2 weeks)**
 - Position: Academic Visitor
 - Institution: MDC/FMP, Berlin, Germany (Supervisor: Thomas Jentsch)
- **2009 – 2011**

- Position: Postdoctoral research fellow
 - Institution: MDC/FMP, Berlin, Germany (Supervisor: Thomas Jentsch)

 - **2006 – 2011**
 - Position: Assistant lecturer
 - Institution: Department of Physiology, UD MHSC / UD FM

 - **2004 – 2007 (7 months in total)**
 - Position: Academic Visitor
 - Institution: MRC Anatomical Neuropharmacology Unit, Oxford, UK (Supervisor: Marco Capogna)

 - **2003 – 2006**
 - Position: Junior research fellow
 - Institution: Department of Physiology, UD MHSC

 - **2001 – 2003**
 - Position: PhD student
 - Institution: Department of Physiology, UD MHSC

 - **1999 – 2001**
 - Position: Resident physician
 - Institution: Department of Traumatology and Hand Surgery, UD MHSC
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EDUCATION AND TRAINING

- **2024**
 - Degree: Doctor of the Hungarian Academy of Sciences (MTA doktora / DSc)
 - Field of study: Section of Biological Sciences, neurobiology (6014)

- **2019**
 - Certificate: Category "C" animal experimentation license
 - ID: T64/B/2019/DEMÁB

- **2016**
 - Degree: Habilitation (Dr. habil.)
 - Institution: University of Debrecen, Faculty of Medicine (29/2016Hab)
 - Field of study: Theoretical medicine

- **2004**
 - Degree: Ph.D. degree
 - Institution: University of Debrecen MHSC (100/2004.PhD)
 - Field of study: Theoretical medicine (Supervisor: Dr. Zoltán Rusznák)

- **1993 – 1999**

- Qualification: Doctor of Medicine (Dr. med. / MD)
 - Institution: University Medical School of Debrecen (75-102/1999.OTE)
 - Medical registration number: 58547
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PERSONAL SKILLS AND COMPETENCES

Language skills

- Mother tongue: Hungarian
- Other languages: English C1, German B2

Scientific and professional competences / Research interests

- Investigation of neuromodulatory mechanisms in the central nervous system.
 - Physiological and pathological aspects of astrocyte-neuron communication, astrocyte functions.
 - Correlations of human cognitive functions with the morphological and functional characteristics of gray matter astrocytes.
 - Contribution of alterations in neuronal ion channels and ion currents to neurological disorders.
 - Investigation of functional differences between human and mouse neocortex on surviving tissue slices.
 - Opto- and chemogenetic investigations and their combinations with rodent behavioral tests.
 - In vitro and rodent behavioral testing of central nervous system-targeted pharmaceuticals.
 - Editorial and reviewer activities.
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ADDITIONAL INFORMATION

Scientific and publication metrics

- Number of publications: 49 (of which D1: 19, Q1: 14, Q2: 7, Q3: 3)
- Last-authored publications: 16 (of which D1: 6, Q1: 4, Q2: 1, Q3: 2)
- First-authored publications: 4 (of which D1: 1, Q1: 1, Q2: 1, n.b.: 1)
- Single-authored publications: 4 (of which D1: 2, Q1: 1, Q2: 1)
- Co-authored publications: 21 (of which D1: 10, Q1: 6, Q2: 4, Q3: 1)
- Number of independent citations: 1984 (as of 04.06.2026.)
- Cumulative Impact Factor (IF): 205.222
- Hirsch index: 22 (as of 04.06.2026.)

Editorial activities:

- Associate Editor, Frontiers in Synaptic Neuroscience

- Guest Editor, Frontiers in Cellular Neuroscience

PhD training:

- Core member of the Doctoral School of Health Sciences, University of Debrecen
- Students who obtained a degree: Baneen Maamrah (2025), Andrea Csemer (2024), Tsogbadrakh Bayasgalan (2022), Brigitta Baksa (2020), Csilla Bordás (2017), Adrienn Kovács (2016)
- Current PhD students: Dr. Bui Minh Hoang, Dr. Kristóf Korpás, Cintia Sokvári, Béla Márton

Awards and honors

- Nomination for the Lecturer of the Year award (2026)
- Rector's Certificate of Merit, University of Debrecen (2025)
- Publication Prize of the University of Debrecen (2020)
- Szodoray Fellowship (2014–2017)
- Bolyai Fellowship (2012–2015)
- Poster Prize, Hungarian Neuroscience Society (2009)
- Youth Award, Hungarian Physiological Society (2008)
- Recognition of supervised students: Andrea Csemer (PhD) – Roma Researcher of the Year (2023), Publication Prize of the University of Debrecen (2024)

Scientific society memberships

- Hungarian Society for Experimental and Clinical Pharmacology (2024–)
- Society for Neuroscience (2016)
- Hungarian Neuroscience Society (2011–)
- Federation of European Neuroscience Societies (2011–)
- Hungarian Physiological Society (2005–)

International collaborations

- Dr. Juan Mena-Segovia (Oxford University, UK / Rutgers University, NJ, USA)
- Dr. Guillermo Spitzmaul (Universidad Nacional del Sur, Bahía Blanca, Argentina)
- Ad-hoc collaborations (for the utilization of research materials): Prof. Thomas Jentsch (MDC/FMP, Berlin, Germany), Prof. Andreas Zimmer (Bonn, Germany)

Conference organization and committee memberships

- 2025 – Conference of the Hungarian Neuroscience Society (program committee membership)
 - 2025 – Membrane Transport Conference, Sümeg (symposium organization)
 - 2019 – Conference of the Hungarian Neuroscience Society (symposium organization)
 - 2018 – Conference of the Hungarian Physiological Society (program committee membership, symposium organization)
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GRANTED RESEARCH PROJECTS (AS PRINCIPAL INVESTIGATOR / GROUP LEADER)

1. **2026 – 2027 | UD THETA**
 - Project: Evaluation of the therapeutic potential of synthetic cannabinoid derivatives in the treatment of neurological and neurodegenerative diseases
 - Amount: 14,756 thousand HUF | Role: Principal Investigator
 2. **2024 – 2028 | NKFIH K 146873**
 - Project: Consequences of pathological astrocyte activation in the mesencephalic locomotor system
 - Amount: 47,994 thousand HUF | Role: Principal Investigator
 3. **NKFIH Excellent Research Infrastructure**
 - Project: Electrophysiological Research Infrastructure for Molecular Medicine
 - Role: Project Coordinator
 4. **2018 – 2020 | NKFIH (Argentine-Hungarian Bilateral TeT project)**
 - Project: Investigation of KCNQ subunits responsible for the M-current in cholinergic nuclei of the reticular activating system
 - Amount: 1,870 thousand HUF | Role: Principal Investigator
 5. **2018 – 2020 | University of Debrecen (OTKA Bridging Fund)**
 - Amount: 3,000 thousand HUF | Role: Principal Investigator
 6. **2014 – 2017 | National Brain Research Program (KTIA_13_NAP-A-I/10)**
 - Project: Investigation of the complex effects of endocannabinoid signaling on the mouse pedunculo pontine nucleus
 - Amount: 18,000 thousand HUF | Role: Principal Investigator
 7. **2013 – 2014 | University of Debrecen (TUKET grant)**
 - Project: Compound effects of the endocannabinoid signalling on the pedunculo pontine nucleus (PPN) in mice
 - Amount: 10,500 thousand HUF | Role: Principal Investigator
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SELECTED PUBLICATIONS (Last/corresponding authored papers from the past 5 years)

**corresponding author*

- Márton B, Ecsedi L, Pocsai K, Douda A, Lamsa K, Hutóczy G, Klekner Á, **Pál B*** (2026) NMDA receptor mediated tonic excitatory currents are elicited by EAAT inhibition on human neocortical pyramidal neurons. *Front. Synaptic Neurosci.* 18:1844197. **Q1, IF: 4,1**
- Pocsai, K., Bayasgalan, T., Csemer, A., Szücs, P., Mena-Segovia, J., **Pál, B.*** (2025). Neurons of the precuneiform nucleus share structural and functional properties of the mesencephalic locomotor region. *Scientific Reports*, 15(1), 41311. **Q1, IF: 3,9**

- Maamrah, B, Pocsai, K, Bui, Minh Hoang, Abdelhadi, A.; Al-khafaji, MQ; Csemer, A, Sokvári, C, Szentesi P., **Pál, B.*** (2025). Chronic chemogenetic activation of astrocytes in the murine mesopontine region leads to disturbances of circadian activity and movement. *Int. J. Mol. Sci.* 26 (10), 1-21, (cikkazonosító: 4793). **D1, IF: 4,9**
- **Pál B*** (2024). Recording of age-related changes on murine and human brain slices. *Immunosenescence: Methods and Protocols*, 147-158.
- **Pál, B.*** (2024). On the functions of astrocyte-mediated neuronal slow inward currents. *Neur. Regen. Res.* 19 (12), 2602-2612. **Q2, IF: 5,9**
- Csemer, A., Sokvári, C., Maamrah, B., Szabó, L., Korpás, K., Pocsai, K., **Pál, B.*** (2024). Pharmacological activation of Piezo1 channels enhances astrocyte-neuron communication via NMDA receptors in the murine neocortex. *Int. J. Mol. Sci.* 25 (7), 3994. **D1, IF: 4,9**
- Csemer, A., Kovács, A., Maamrah, B., Pocsai, K., Korpás, K., Klekner, Á., Szűcs, P., Nánási, P., **Pál, B.***: Astrocyte- and NMDA receptor-dependent slow inward currents differently contribute to synaptic plasticity in an age-dependent manner in mouse and human neocortex. *Aging Cell*. [Epub ahead of print] e13939, 2023. **D1, IF: 8**
- Maamrah, B., Pocsai, K., Bayasgalan, T., Csemer, A., **Pál, B.***: KCNQ4 potassium channel subunit deletion leads to exaggerated acoustic startle reflex in mice. *Neuroreport*. 34 (4), 232-237, 2023. **Q3, IF: 1,6**
- Gönczi, M., Csemer, A., Szabó, L., Sztretye, M., Fodor, J., Pocsai, K., Szenthe, K., Keller-Pintér, A., Köhler, Z., Nánási, P., Szentandrassy, N., **Pál, B.***, Csernoch, L.: Astaxanthin Exerts Anabolic Effects via Pleiotropic Modulation of the Excitable Tissue. *Int. J. Mol. Sci.* 23 (2), 917, 2022. **D1, IF: 5,6; *levező szerző**
- Bayasgalan, T., Stupniki, S., Kovács, A., Csemer, A., Szentesi, P., Pocsai, K., Dionisio, L., Spitzmaul, G., **Pál, B.***: Alteration of mesopontine cholinergic function by the lack of KCNQ4 subunit. *Front. Cell. Neurosci.* 15 707789, 2021. **Q1, IF: 6,147**
- Bayasgalan, T., Csemer, A., Kovács, A., Pocsai, K., **Pál, B.***: Topographical organization of M-current on dorsal and median raphe serotonergic neurons. *Front. Cell. Neurosci.* 15 614947, 2021. **Q1, IF: 6,147**