

Curriculum Vitae - Attila Ambrus, Ph.D., D.Sc.

Education:

- Erdey-Grúz Tibor Chemical Technical College, Debrecen, Hungary, 1987-1991
- M.Sc., *Chemist*, Kossuth Lajos University (KLU), Debrecen, Hungary, 1991-1996
- M.A., *English-Hungarian Vocational Translator in Chemistry*, KLU, 1991-1996
- M.A., *High School Chemistry Teacher*, KLU, 1993-1998
- Advanced Certificate, *Principles of Protein Structure*, University of London, Birkbeck College, London, UK, 1996-1997 (scholarship from the George Soros Foundation)
- Ph.D., *Structural Biochemistry*, Dept. of Biochemistry and Molecular Biology, University of Debrecen, Debrecen, Hungary, 1996-2001, *supervisor: Prof. László Fésüs, summa cum laude*

Habilitation degree: June 30, 2022, Semmelweis University, Budapest, Hungary

Doctor of Science (D.Sc.) degree: June 24, 2022 (Hungarian Academy of Sciences [HASc])

Language proficiency: mother tongue: *Hungarian, Russian*: state exam of Hungary (basic level, type C), *English*: state exam of Hungary (advanced level, type C)

Computer skills: *Computer operator certificate* (1997, KLU, basic level)

Post-doctoral positions:

- University of Arizona, Dept. of Biochemistry and Molecular Biophysics, Tucson, AZ, USA, 2001-2002, *advisor: Prof. William R. Montfort*
- University of Arizona, Dept. of Pharmacology and Toxicology, 2003-2006, *advisor: Prof. Danzhou Yang (in strong collaboration with Prof. Laurence Hurley)*

Faculty positions:

- Univ. of Debrecen, Dept. of Biochemistry and Molecular Biology, *Lecturer*, 2000-2003
- Semmelweis University, Dept. of Medical Biochemistry, *Lecturer*, 2006-2011
- Semmelweis University, Dept. of Medical Biochemistry, *Assistant Professor*, 2011-2019
- Hungarian Academy of Sciences, *Senior Research Fellow*, 2017-2019
- Semmelweis University, Dept. of Medical Biochemistry (Dept. of Biochemistry since 2020), *Associate Professor*, 2019-2023
- Semmelweis University, Dept. of Biochemistry, *Full Professor*, 2023-

Teaching responsibilities:

- *Chemistry*: Erdey-Grúz Tibor Chemical Technical College (6 months for M.A. degree), 1998
- *Medical Biochemistry*:
 - Medical Biochemistry I-II, practice group leader in Hungarian and English, Univ. of Debrecen, Faculties of Medicine and Dentistry, 1997-2000
 - Medical Biochemistry I, seminar/practice group leader in Hungarian and English, Semmelweis University, Faculties of Medicine and Dentistry, 2007-2016
 - Medical Biochemistry I (new curriculum), seminar/practice group leader in Hungarian and English, Semmelweis University, Faculties of Medicine and Dentistry, 2017-
 - Dental Biochemistry I-II, lecturer in Hungarian and English, Semmelweis University, 2018-2019, and 2023 (selected lectures)
- *Medical Chemistry*: practice group leader in Hungarian and English (2006-2016) and lecturer in English (2008-2016, selected lectures), Faculties of Medicine and Dentistry; 2020-2021 (practice only)

• *Basics of Medical Chemistry*: lecturer in English (selected lectures), Faculties of Medicine/Dentistry, 2009-2016

• *Biochemistry I-II*: lecturer (selected lectures), Hungarian/English, Semmelweis Univ., Faculty of Pharmacy, 2011-

(my students often gained exam exemptions due to their achievements on student competitions)

Examination activity: 1997-2000 (Univ. of Debrecen, Faculties of Medicine/Dentistry) and 2006- (Semmelweis Univ., Faculties of Medicine/Dentistry/Pharmacy) in Hungarian/English oral/written colloquia/final exams (medical chemistry/biochemistry courses), preparation of MCQ/essay/problem-solving/formula questions, superintendence and correction of written exams; supervision of graduation final exams; member in Ph.D. oral examination committees and B.Sc./M.Sc./Ph.D./habilitation/D.Sc. defence committees

Undergraduate student researchers in the lab: Zoltán Klimaj (2008–2010), Mattias Nilsson (2008–2013), Mária Kozma (2008-2008), Tommy Ivanics (2009–2010), Krisztina Trimmel (2011), Daniel Oren (2014-2016), Gareth Ogdon (2014-2014), Omer Shpack (2014-2016), Zsófia Zámbo (2014-2016), Jeremiah Thomas (2015-2017), Dávid Bui (2016-2017), Marcell Sinkalovics (2018-2019), Réka Nonn (2019-2020), Adrienn Nagy (2019-2022), Soma Attila Wittinger (2019-2022), Krisztina Rubina Vass (2020-2022), Eszter Zrupkó (2020-2023), Anna Franciska Tóth (2020-2022), Gu Yibo (2021-2022), Bálint Böcskei (2022-2022), Zsófia Fekete (2023-2024), Yashar Chalabiani (2023-2023), Aleksey Krupyshev (2023-2025), Anna Sára Bábik (2023-2024), Jorn Hille (2023-2023), Alireza Bagheri (2023-2024), Sára Laura Gradvolt (2024-2025), Csaba Ármin Horváth (2023-2024), Amirata Karimpour (2024-2024), Arad Darvishi (2025-), Mani Amin Tehran (2025-2025), Hessam Akbari (2025-2026), Kooshyar Hemati Pargami (2025-2025), Minh Anh Nguyen (2025-), Aisha Tulegenova (2025-), Eszter Kanóczki (2024-), Jisu Lim (2025-)

Registered supervisor at the National Mentoring Academy for Undergraduate Scientists (mentorees: Botond Kertész [2024-2024], Viktória Éger [2025-2025])

B.Sc./M.Sc./M.D. theses in the lab: Mattias Nilsson, 2013; Zsófia Zámbo, 2016; Jeremiah Thomas, 2017; Krisztina Rubina Vass, 2019 (B.Sc.); Krisztina Rubina Vass, 2022 (M.Sc.); Soma Attila Wittinger, 2022; Adrienn Nagy, 2022; Anna Franciska Tóth, 2022; Lara Paba (Università degli Studi di Cagliari (UNICA), Cagliari, Italy), 2022; Eszter Zrupkó, 2023; Ileana Rosanna Viggiano (M.Sc., Università degli Studi di Padova, Padova, Italy), 2025

Lectures from the lab at Student Science Conferences***: Mattias Nilsson: II. Prize, 2010; Zsófia Zámbo: not ranked, 2016; Krisztina Rubina Vass: not ranked, 2021; Adrienn Nagy: not ranked, 2022; Aleksey Krupyshev: not ranked, 2025

*at Semmelweis Univ., a lecture (abstract, slides, but no essay) is required only from the students

**Ambrus A at times also serves as judge (twice also at the national conferences: 2019, 2025)

High School Research Competition: Mária Kozma, national III. prize - 2007

Lectures in Ph.D. courses:

- *Biochemistry of Apoptosis*, 2x45 min, University of Debrecen, 2000
- *Principles in Drug Discovery, Design, and Development*, 2x45 min, Univ. of Arizona, 2004
- *Neurochemistry*, 2x45 min, Semmelweis University, 2006
- *Structural Biology*, course leader and lecturer, 4x2x45min, Semmelweis University, 2008

• *Molecular Enzymology*, lecturer: Prof. Frank Jordan [Rutgers University, Newark, NJ, USA], Semmelweis University, 2011 [14x2x45 min in English; no lectures, but writing the relevant Fulbright fellowship and overall organization of the course, were performed by Ambrus A]

Direct laboratory supervision of Ph.D. graduate students at the Univ. of Arizona (as a post-doc): *Clifford Whatcott* (2-month rotation, 2004), *Justin Dietrich* (3-month rotation, 2005), *Ding Chen* (2003-2006, Chen D is second author in three first-authored publications of Ambrus A [Nucl. Acids Res., 2006; Anal. Biochem., 2005; Biochemistry, 2005]), *Tiffanie Bialis* (2004-2006, Bialis T is co-author in a first-authored publication of Ambrus A [Nucl. Acids Res., 2006])

Courses (where Responsible Lecturer/Leader): *Biochemistry I-II* (2 semesters, 3 separate courses in each semester [Hungarian/German/English]), Semmelweis University, Faculty of Pharmacy, 2010/2011 II. semester–present, obligatory courses; *developments in the courses since 2011:* commencement of the course in German, launch of Biochemistry practice in Hungarian/English/German (also building up a student laboratory), modernization of the course syllabi, involvement of several young lecturers and practice leaders into each course, credit and lecture/practice time increase

Digital course material: Ambrus A: Principal protein analysis and separation techniques in biochemistry (for Pharmacy students, 2020, 8 pages, in Hungarian)

Ph.D. graduate students at Semmelweis University:

- *Dr. Eszter Szabó* (2015-2020; Ph.D. thesis based on: Szabo E, ..., Ambrus A, Free Radic. Biol. Med, 2018 and Szabo E, ..., Ambrus A, Hum. Mol. Genet., 2019; now Assistant Professor; national Ph.D. conference I. prize (lecture, 2020))
- *Dr. Réka Mizsei* (2014-2021; Ph.D. thesis based on: Ambrus A[#], Wang J[#], Mizsei R[#], ..., Adam-Vizi V, Biochim. Biophys. Acta, 2016 ([#]: contributed equally) and Szabo E, Mizsei R, ..., Ambrus A, Free Radic. Biol. Med, 2018); now in the USA
- *Dr. Bálint Nagy* (2015-2023; Ph.D. thesis based on: Nagy B, ..., Ambrus A, BBA – Gen. Subj., 2021, now Assistant Professor; Ph.D. conference I. prize (poster, 2017))
- *Áron Zubánics-Nagy* (2024-)
- *Momen Sameh Elsayed Fadel Elkheshen* (M.D.-Ph.D. student, 2025-)
- *Alamin Wafa Mutasim Mohamedosman* (2026- , Stipendium Hungaricum Programme)

Post-doctors/junior faculty members in the lab: *Dr. Ágnes Hubert* (2015-2017); *Dr. Olivér Ozohanics* (2018- , Research Associate); *Dr. Eszter Szabó* (2020- , Assistant Professor); *Dr. András Czajlik* (2022- , Assistant Professor), *Dr. Bálint Nagy* (2023- , Assistant Professor)

Decorations, honors, scholarships, fellowships and grants (where PI):

- 15th place (finalist) in National High School Competition in Chemistry (*OKTV*), 1991
- 9th place (finalist) in National Chemical Technical Colleges Competition (*OSZTV*), 1991
- *George Soros Scholarship* to the University of London, 1996-1997
- *János Bolyai Research Fellowships*, Hungarian Academy of Sciences, 2006-2009/2011-2014
- *Young Investigator Research Grant*, Gedeon Richter Pharmaceutical Plc., 1 M HUF, 2007-2008
- *IUBMB-Sigma-Aldrich Travel Award*, 10th IUBMB Conference, Salvador, Brazil, 2007
- *Young Investigator Research Grant*, Semmelweis University, 3 M HUF, 2008-2009
- *Bolyai Plaque*, Hungarian Academy of Sciences, 2010
- *EMBO Short-term Fellowship*, 1 month, Univ. of Pittsburgh, PA, USA, 2011
- *Finn Wold Travel Award*, IX. European Symposium of Protein Society, Stockholm, 2011

- *Fulbright Fellowship*, Fulbright Commission (USA), 3 months, Rutgers University, 2012
- *Occasional Lecturer Fund*, Fulbright Commission (USA), 2012
- *MedInProt Grant* (co-PI), Hungarian Academy of Sciences, 9.32 M HUF, 2015
- *Erasmus Grant*, 2 weeks, Helmholtz-Zentrum Berlin (HZB), Berlin, Germany, 2015
- *Erasmus+ Grants*, 5+5 months/2+2 weeks (2016-2018) and 60+60+10 days (2018-2020), Rutgers University, Newark, NJ, USA
- *Merit Prizes* (science section), Semmelweis University, 2016, 2019, and 2023
- *European Union's Horizon 2020 Research and Innovation Programme grants* (synchrotron beam time grants, BESSY II synchrotron, HZB, granted four times for half, half, full, and full year periods: 2018, 2019, 2020, 2021), 2400, 800, 4800, 4800 Euros
- *Higher Education Institution Excellence Program Grant*, Neurology Section (FIKP), Ministry of Human Capacities of Hungary, 9.5 M HUF, 2019-2020
- *Research support of the Semmelweis Univ., Dept. of Biochemistry*, 2 M HUF, 2019
- *Research support of Lev Therapeutics* (USA), 30,000 USD, 2020-2021
- *Research Excellence Grant*, Ministry of Human Capacities of Hungary, 9.5 M HUF, 2020-2021
- *Research Excellence Grant*, Ministry of Human Capacities of Hungary, 7.5 M HUF/year (30 M HUF), 2021-2026
- *iNEXT-Discovery Grant* (EU grant, X-ray diffraction in HZB, instrument/travel costs), 2022
- *STIA-OTKA-2021 Grant*, Semmelweis University, 9.98 M HUF, 2022
- *iNEXT-Discovery Grant* (EU grant, cryo-EM in CEITEC, Brno; instrument/travel costs), 2022
- *OTKA grant* (K143627), Hung. Nat. Res. Dev. Innov. Office, 48 M HUF, 2022-26
- *Prima Prize* (Budapest and Pest County, Science Section, National Association of Entrepreneurs and Employers), 2023

Contributions to other research grants (in all these grants Ambrus A was grant writer and sub-group leader with 50% share, PI: Prof. Adam-Vizi V):

- *Hungarian Academy of Sciences Supported Research Group* (TKI), 180 M HUF, 2013-2019
- *Hungarian Brain Research Programs I/II*, Hungarian Academy of Sciences, 95/76 M HUF, 2014-2017/2017-2021
- *OTKA K112230*, Hung. Nat. Res. Dev. Innov. Office, 36 M HUF, 2015-2018
- *Higher Education Institution Excellence Program* (FIKP), Ministry of Human Capacities of Hungary, 10 M HUF, 2018-2019
- *OTKA NK81983*, Hung. Nat. Res. Dev. Innov. Office, 56 M HUF, 2010-2014
- *TÁMOP* (4.2.1.B-09/1/KMR), Hung. Nat. Res. Dev. Innov. Office, 30 M HUF, 2010
- *OTKA IN85082*, Hung. Nat. Res. Dev. Innov. Office, 2.488 M HUF, 2011-2013

Conference Organization:

- 9th International Conference on Brain Energy Metabolism, Mitochondrial-Cytosolic Interactions: From Energetics to Pathogenesis, July 7-10, 2010, Semmelweis University, organizing committee member
- 20th European Bioenergetics Conference (EBEC), August 25-30, 2018, Semmelweis University, organizing committee member
- 27th Annual Conference of the Society for Redox Biology and Medicine, November 18-20, 2020, Orlando, FL, USA, virtual conference, abstract reviewer
- 35th Symposium of the Protein Society, July 7-9 and 12-14, 2021, Boston, MA, USA, virtual conference, abstract reviewer and co-leader of the Career Development and Networking Table

Selected lectures*:

- German-Hungarian Conference on Proteomics, Debrecen, Hungary, 2002
 - 10th International Union of Biochemistry and Molecular Biology Conference, Salvador da Bahia, Brazil, 2007
 - Semmelweis Symposium, Budapest, Hungary, 2012
 - 20th European Bioenergetics Conference, Budapest, Hungary, 2018
 - Frank Jordan Symposium, Rutgers University, Newark, NJ, USA, 2022
 - Cornell University, Brain and Mind Research Institute, New York, NY, USA, 2025
 - Bridgewater College, Bridgewater, VA, USA, 2026
- *other conference/seminar talks: >25, posters: >50 (Hungarian/English, internationally)

Editorial Board Memberships:

- Life, Proteins and Proteomics, as well as Biochemistry, Biophysics and Computational Biology Sections, 2020-2023; Guest Editor of the Special Issue “Current Approaches in Molecular Enzymology”
- Frontiers in Physiology, Mitochondrial Research Section, 2022-

Structure coordinates in the Protein Data Bank (PDB IDs): 19 structures

Memberships in professional organizations:

- Protein Society (USA), 2001 – (also member of the Membership Committee in 2020)
- Public-Body member of the Hungarian Academy of Sciences, 2006 –
- NMR Work Commission of the Hungarian Academy of Sciences, 2006 –
- Hungarian Biochemical Society, 1996 –
- Hungarian Society for Bioinformatics, 2008 –
- International Society for Magnetic Resonance, 2010 –
- European Society for Neurochemistry, 2013 – 2025
- American Chemical Society, 2010 – 2025; 2025- ACS Community Associate
- Society for Redox Biology and Medicine, 2019-2023

Reviewed for: Analytical Biochemistry, Protein Expression and Purification, Biochimie, Human Genetics, Frontiers in Oncology, Journal of Structural Biology, Comparative Biochemistry and Physiology A, Journal of Photochemistry and Photobiology B: Biology, FEBS Letters, Preparative Biochemistry and Biotechnology, Biochimica et Biophysica Acta, Cellular and Molecular Life Sciences, Human Molecular Genetics, MethodsX, ChemPhysChem, Journal of Clinical Investigation, Nature Communications, Scientific Reports, Communications Biology, Neurochemical Research, Journal of Molecular Recognition, International Journal of Molecular Sciences, International Journal of Developmental Neuroscience, Journal of Biological Chemistry, Science Advances, Free Radical Biology and Medicine, Advanced Science, Molecular Metabolism

Invention: Danzhou Yang, Laurence H. Hurley, Jixun Dai, Attila Ambrus, Ding Chen, “Folding Pattern and Structure of the G-quadruplex in the Human Telomeric Sequence Formed under Physiological Condition.” Invention Disclosure/Provisional Application for Patent, University of Arizona, Tucson, AZ, USA, submitted: March 30, 2006

Moderation on professional website: Human Disease Genes website series (www.humandiseasegenes.nl), responsible for the gene *DLD*

Study trips:

- Torvergata University, Rome, Italy, 2 weeks, 1997
- Institute of Molecular Biotechnology, Jena, Germany, 1 month, 1998
- University of Ferrara, Ferrara, Italy, 2 weeks, 1998
- NMR laboratory, University of Debrecen, 1 year, 1999-2000
- University of Arizona, Department of Chemistry, 8 months, 2000-2001
- Stanford Synchrotron Radiation Laboratory, Menlo Park, CA, USA, 3 days, 2002
- West Coast Bruker Headquarter, San Francisco/Fremont, CA, USA, 6 days, 2003
- Bruker BioSpin West Coast Regional Users Meeting, San Diego, CA, USA, 2 days, 2005
- University of New Castle upon Tyne, MRI Center, New Castle, UK, 2 days, 2008
- Swedish NMR Centre, University of Gothenburg, Gothenburg, Sweden, 4 days, 2010
- Bruker BioSpin AG, Fällanden/Zürich, Switzerland, 3 days, 2010
- University of Pittsburgh, 1 month, 2011
- Advanced Photon Source at Argonne National Laboratory, Chicago, IL, USA, 3 days, 2011
- Rutgers University, Department of Chemistry, 3 months, 2012
- Helmholtz-Zentrum Berlin, 2 weeks, 2015
- Rutgers University, Department of Chemistry, 1 week, 2017
- University of Arizona, Department of Chemistry and Biochemistry, 2 weeks, 2017
- University of Arizona, Department of Chemistry and Biochemistry, 3 weeks, 2018
- Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA, 2 weeks, 2022

Other responsibilities: Member of the Faculty Board at the Faculty of Pharmacy (2022-); Internal ISO auditor (2007–2011); Deputy Head of ISO at the Dept. of Biochemistry (2023-); Head of ISO at the Dept. of Biochemistry (2026-)

International guest scientists in the lab (beyond thesis workers): *Zenkő Zsuzsanna Réti*, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Targu Mures, Romania, 2011, 2 weeks; *Dr. Jaime Fernandez Barbadillo*, Universidad Complutense de Madrid, Madrid, Spain, 2018-2019, 4 months; *Faiza Aslam*, University of Köln, Köln, Germany, 2022, 3 weeks; *Dr. Rippa Sehgal*, Bridgewater College, Bridgewater, VA, USA, 2024 and 2025, 1 month and 1 week; *Ceren Cakır*, Ankara Medipol University, Ankara, Turkey, 2024, 2 months; *Skyler Parks*, Bridgewater College, Bridgewater, VA, USA, 2025, 1 month; *Teoman Turgut*, Atılım University, Ankara, Turkey, 2025, 1 month; *Ahmet Dogukan Özcan* Yeditepe University, Istanbul, Turkey, 2025, 1 month

Other reviewing: grants (Hungarian Scientific Research Fund [OTKA], 22 times; also in the Panel in 2023), Ph.D. theses (nine times), D.Sc. thesis (two times), Habilitation degree application (ten times)

Laboratory website: <https://scholar.semmelweis.hu/ambrusattila/>

Publications:

Scopus: https://www.scopus.com/authid/detail.uri?authorId=7003689523&featureToggles=FEATURE_AUTHOR_DETAILS_BOTOX:1&at_feature_toggle=1

Web of Science: <https://www.webofscience.com/wos/author/record/72812>

Google Scholar: <http://scholar.google.com/citations?user=hKVjrQcAAAAJ&hl=en>

ORCID: <http://orcid.org/0000-0001-6014-3175>