



Europass Curriculum Vitae

Personal information

First name(s) / Surname(s) **Horia Leonard Banciu**
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Nationality Romanian

Date of birth 8 August 1974

Gender Male

**Desired
employment /
Occupational field** **Faculty of Biology and Geology, UBB**

Work experience

Dates 2017 – Present
Occupation or position held Full Professor
Main activities and responsibilities Teaching and research
Name and address of employer Babeş-Bolyai University, 1 Kogalniceanu Street, Cluj-Napoca, Romania
Type of business or sector Academic teaching and research

Dates 2012 –2017
Occupation or position held Associate Professor
Main activities and responsibilities Teaching and research
Name and address of employer Babeş-Bolyai University, 1 Kogalniceanu Street, Cluj-Napoca, Romania
Type of business or sector Academic teaching and research

Dates 2004 – 2012
Occupation or position held Lecturer

Main activities and responsibilities	Teaching and research
Name and address of employer	Babeş-Bolyai University, 1 Kogalniceanu Street, Cluj-Napoca, Romania
Type of business or sector	Academic teaching and research
Dates	1997 – 2004
Occupation or position held	Tutor/Teaching assistant
Main activities and responsibilities	Teaching and research
Name and address of employer	Babeş-Bolyai University, 1 Kogalniceanu Street, Cluj-Napoca, Romania
Type of business or sector	Academic teaching and research
Education and training	
Dates	2015
Title of qualification awarded	Habilitation Degree / PhD supervisor
Principal subjects/occupational skills covered	Microbial physiology and diversity, Molecular Biology, Bioinformatics
Name and type of organisation providing education and training	Institute of Doctoral Studies/ Doctoral School of Integrative Biology; Babeş-Bolyai University of Cluj-Napoca, Romania
Level in national or international classification	No classification in Shanghai Ranking
Dates	2002-2004
Title of qualification awarded	PhD.
Principal subjects/occupational skills covered	Microbial physiology and biotechnology
Name and type of organisation providing education and training	TU Delft, The Netherlands
Level in national or international classification	Top 200 in Shanghai Ranking (2010)
Dates	1999
Title of qualification awarded	Research assistant
Principal subjects/occupational skills covered	Molecular biology of extremophilic bacteria
Name and type of organisation providing education and training	Mount Sinai School of Medicine New York City, U.S.A.
Level in national or international classification	Top 200 in Shanghai Ranking (2010)

Dates 1998

Title of qualification awarded MSc.

Principal subjects/occupational skills covered Cell and molecular biology

Name and type of organisation providing education and training Faculty of Biology and Geology, Babes-Bolyai University of Cluj-Napoca, Romania

Level in national or international classification No classification in Shanghai Ranking

Dates 1997

Title of qualification awarded BSc.

Principal subjects/occupational skills covered Biology

Name and type of organisation providing education and training Faculty of Biology and Geology, Babes-Bolyai University of Cluj-Napoca, Romania

Level in national or international classification No classification in Shanghai Ranking

Personal skills and competences

Mother tongue(s) **Specify mother tongue** Romanian

Other language(s)

Self-assessment

European level (*)

English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
GOOD	GOOD	GOOD	GOOD	GOOD

(*) [Common European Framework of Reference for Languages](#)

Social skills and competences

Team spirit and good communication skills

Organisational skills and competences

Research grant member and manager, between 2006-2015

Technical skills and competences

Related to laboratory work experience

Computer skills and competences

Basic knowledge in Windows and Office

Other skills and competences

Professional skill: cell and molecular biology techniques (cloning, transformation, PCR), broad knowledge in biochemistry, biophysics, genetics, microbiology, biotechnology. I am used to techniques of membrane protein purification by gel chromatography, gradient centrifugation, gel electrophoresis, Western blotting, HPLC, characterization of proteins by spectrophotometry, spectrofluorometry, membrane vesicles preparation; practical knowledge of bacteriology and applied microbiology, bacterial cell cultivation and identification. Applying basic bioinformatics tools for pairwise (EMBOSS) and multiple sequence alignments (CLUSTAL, MAFFT, MUSCLE), fast similarity search (BLAST) and phylogenetic tree construction (MEGA)

Annexes	Appendix 1: List of Research projects as principal investigator
	Appendix 2: List of awards
	Appendix 3: List of organized and invited conferences
	Appendix 4: List of most relevant 10 publications and scientific metrics
	Appendix 5: Extended list of publication
	Appendix 6: Other selected professional achievements

List of research projects as principal investigator or team leader

(main coordinator or partner team leader)

No	Title	Interval	Budget	Tasks
1.	Ecogenomics of uncultured microorganisms to unravel their functional roles in biogeochemical nutrient cycling in hypersaline stratified lake (UnCycle); Code PN-III-P4-ID-PCE-2020-1559, nr. contract PCE 64/ 2021	2021-2023	1.198.032 RON / 240.000 Euro	Principal investigator/ main coordinator
2.	Monitoring and risk assessment for groundwater sources in rural communities of Romania (GROUNDWATERISK); cod EEA-RO-NO-2018-0138, Contract no. 4 / 2019 (Director: CS I Dr. Oana Moldovan)	2019-2023	400.000 Euro	Team Leader for the Partner "Babeş-Bolyai" University of Cluj- Napoca
3.	Food chains in the dark: diversity and evolutionary processes in caves (DARKFOOD), code PN-III-P4-ID-PCCF-2016-0016, Contract no. 15/10.10.2018 (Director: CS I Dr. Oana Moldovan)	2018-2022	2.000.000 RON / 430.000 Euro	Team Leader for the Partner "Babeş-Bolyai" University of Cluj- Napoca
4.	Enlightening the dark: microbial diversity and functionality in sapropels from Romanian salt lakes (ERebuS), code PN-III-P4-ID-PCE-2016-0303, Contract no. 103/12.07.2017	2017-2019	850.000 RON/ 180.000 Euro	Principal investigator/ main coordinator
5.	Diversity of Archaea Inhabiting Saline Lakes from Transylvanian Basin (Central Romania) Code PN II-PCE-3-0546, Contract no. 186/2011.	2011-2016	1,500,000 RON/ 300,000 Euro	Principal investigator/ main coordinator
6.	Modeling of the heavy metals impact on aquifers by complex study of groundwater fauna and monitoring in GRID, MODEL-ACVASUB system. Proiect CDI II, Code 1247, Contract No. 31-032/14.09.2007	2007-2010	157,601 RON/ 45,000 Euro	Team Leader for the Partner "Babeş-Bolyai" University of Cluj- Napoca
7.	Energy conservation in double extremophilic bacteria: basic and applicative research. CEEEX Grant, Code 85, type ET, Contract No. 5913/ 18.09.2006	2006-2008	140,250 RON/ 40,000 Euro	Principal investigator/ main coordinator
8.	Purification of avidin from chicken egg yolk for using in immunochemical assays. C.N.C.S.I.S. Grant, Code 88, type AT, Contract No. 2771/ 23.05.2006.	2006-2007	31,500 RON/ 10,000 Euro	Principal investigator/ main coordinator

List of awards

- 2002 – Best poster award** at EURO Summer School “The Sulfur Cycle in Environmental Technology”, 12-17 May, Wageningen, The Netherlands;
- 2003 - Yakult Best Poster Award** at Annual Session of the Dutch Society for Microbiology, 15-16 April, Arnhem-Papendal, The Netherlands.
- 2005 – “Babeş-Bolyai” University Award** (Nr. 30485 / 14.04.2005) for the book „*Physiology of alkaliphilic sulfur-oxidizing bacteria from soda lakes*”, Optima Grafische Communicatie BV, Rotterdam, The Netherlands, 2004, ISBN 90-77595-87-2
- 2006 - „In Hoc Signo Vinces” Award** of Life Science Committee of **C.N.C.S.I.S (Romanian Council for Academic Research)**.
- 2006 – “Babeş-Bolyai” University award** (No. 20639 / 11.12.2006) for research achievements.
- 2015 – Excellentia award for research achievements of The Student Council of “Babeş-Bolyai” University of Cluj-Napoca.**
- 2017 - “Emanoil Teodorescu” Award of The Romanian Academy** (Biological Science).
- 2021 – Excellentia award for research achievements of The Student Council of “Babeş-Bolyai” University of Cluj-Napoca.**
- 2024 – Award for Excellence in teaching achievements during 2023** of the “Babeş-Bolyai” University of Cluj-Napoca.

List of organized and invited conferences

2019

Main organizer of *The 12th International Conference on Halophilic Microorganisms* – Halophiles 2019, 24-28 June, 2019, Cluj-Napoca, Romania.

Awarded with Meeting Organizer Grant Meeting, cod FEMS-GO-2018-09, Budget: 4000 Euro.

2012

Invited speaker at the Annual Session („A New Approach of the Academic Research in Biology”) of the Institute of Biology, Romanian Academy, Bucharest, 12-13 December, 2012.

- Andrei, A.-Ș., Baricz, A., Muntean, V., Coman, C., Keresztes, Zs. G., Alexe, M., **Banciu, H.** Diversity of archaeal community in the chemocline of a hypersaline lake in the Transylvanian Basin (Romania). Book of Abstracts, p.40 - 41.

2016

Invited speaker at The 11th International Conference on Halophilic Microorganisms (Halophiles 2016), 22-27 May 2016, San Juan, Puerto Rico.

- **Banciu, H.L.**, Andrei, A.-Ș., Baricz, A., Muntean, V., Alexe, M., Podar, M. „Microbial diversity in permanently stratified hypersaline lakes of the Transylvanian Basin, central Romania.”

Invited speaker at The 56th Annual Session („85 ani de cercetare în domeniul microbiologiei”) of The Institute of Biology, Romanian Academy, Bucharest, 9 December, 2016.

- Baricz A., Battaes K.P., Cîmpean M., Andrei A.-Ș., Chiriac C., Levei E.A., Momeu L., Cristea A., Pop D.A., Alexe M., Muntean V., **Banciu H.L.**, „Un an de studiu integrat al vieții microscopice din lacul Ursu (Sovata, România)”. Volumul : INSTITUTUL DE BIOLOGIE. Sesiune anuală de comunicări științifice (ISBN 978-973-558-953-0), p. 41-45.

2022

Invited speaker at The 13th Conference on Halophilic Microorganisms: HALOPHILES 2022, 26 -29 June, 2022 , Alicante, Spain.

- Gridan IM, Bustos-Caparrós E, Viver T, Zety AV, Baricz A, Cristea A, Rusu I, Rosselló-Móra R, **Banciu HL.** Unlocking the diversity and ecology of uncultured microbes in permanently stratified hypersaline lakes. Book of Abstracts, p. 31.

2023

Invited speaker at The 1st RoBioinfo Conference, 11-13 May 2023, Bucharest, Romania,

- Gridan IM, Zety AV, Sturzu-Cosma S, Baricz A, Cristea A, **Banciu HL.** (2023) Diving into the Unknown: revealing the diversity and ecological roles of uncultured microorganisms in the permanently stratified hypersaline lakes. In: Mirăuță B., Zenoaga-Barbăroșie C (eds) Human genomics and microbiome in the context of data federation – RoBioinfo Conference, Ed. Universitară, București, ISBN 978-606-28-1617-9. pp. 43-45.

Invited speaker at Workshop "Cercetări în întineric" – Academy Days, Emil Racoviță Institute of Speleology – Romanian Academy, 5 October, 2023, Cluj-Napoca, Romania.

- Gridan IM, Zety AV, **Banciu HL.** (2023) Combined metagenomics and metatranscriptomics for revealing the diversity and roles of microbiome in the hypersaline Fără Fund ('Bottomless') Lake, Central Romania.

2024

- **Main organizer of** *The 2nd Conference of the Romanian Society of Bioinformatics (RSBI) – RoBioinfo 2024*, 11-13 April, 2024, Cluj-Napoca, Romania.

List of most relevant 10 publications

1. Andrei A.Ş., **Banciu H.L.**, Oren A. (2012) Living with salt: metabolic and phylogenetic diversity of archaea inhabiting saline ecosystems. *FEMS Microbiol Lett.* **330** (1), 1-9. <https://doi.org/10.1111/j.1574-6968.2012.02526.x>
2. Andrei, A.-Ş., Robeson, M.S., Baricz, A., Coman, C., Muntean, V., Ionescu, A., Etiope, G., Alexe, M., Sicora, C.I., Podar, M., **Banciu, H.L.** (2015). Contrasting taxonomic stratification of microbial communities in two hypersaline meromictic lakes. *ISME J.*, **9** (12): 2642-2656. <https://doi.org/10.1038/ismej.2015.60>
3. **Banciu, H.L.**, Muntyan, M.S. (2015). Adaptive strategies in the double-extremophilic prokaryotes inhabiting soda lakes. *Curr Opin Microbiol.*, **25**: 73-79. <https://doi.org/10.1016/j.mib.2015.05.003>
4. Voica, D.M., Bartha, L., **Banciu, H.L.**, Oren, A. (2016). Heavy metal resistance in halophilic *Bacteria* and *Archaea*. *FEMS Microbiol. Lett.* **363**(14): fnw146. <https://doi.org/10.1093/femsle/fnw146> .
5. Lee, C.J., McMullan, P.E., O’Kane, C.J., Stevenson, A., Santos, I.C., Roy, C., Ghosh, W., Mancinelli, R.L., Mormile, M.R., McMullan, G., **Banciu, H.L.**, Fares, M.A., Benison, K.C., Oren, A., Dyall-Smith, M.L., Hallsworth, J.E. (2018). NaCl-saturated brines are thermodynamically moderate, rather than extreme, microbial habitats. *FEMS Microbiol. Rev.*, **42** (5): 672–693. <https://doi.org/10.1093/femsre/fuy026>
6. Bulzu, P.-A., Andrei, A.-Ş., Salcher, M.M., Mehrshad, M., Inoue, K., Kandori, H., Bèjà, O., Ghai, R., **Banciu, H.L.** (2019) Casting light on Asgardarchaeota metabolism in a sunlit microoxic niche. *Nat. Microbiol.* **4**: 1129–1137. <https://doi.org/10.1038/s41564-019-0404-y> .
7. Baricz, A., Chiriac, C.M., Andrei, A.-Ş., Bulzu, P.-A., Levei, E.A., Cadar, O., Battaes, K.P., Cîmpean, M., Şenilă, M., Cristea, A., Muntean, V., Alexe, M., Coman, C., Szekeres, E.K., Sicora, C.I., Ionescu, A., Blain, D., O’Neill, W.K., Edwards, J., Hallsworth, J.E., **Banciu, H.L.** (2020) Spatio-temporal insights into microbiology of the freshwater-to-hypersaline, oxic-hypoxic-euxinic waters of Ursu Lake. *Environ. Microbiol.* **23**(7): 3523–3540. <https://doi.org/10.1111/1462-2920.14909> .
8. Bartha, L., Mandáková, T., Kovařík, A., Bulzu, P.-A., Rodde, N., Mahelka, V., Lysak, M.A., Fustier, M.-A., Šafář, J., Cápál, P., Keresztes, L., **Banciu, H.L.** (2022) Intact rDNA arrays of Potentilla-origin detected in *Erythronium* nucleus suggest recent eudicot-to-monocot horizontal transfer. *New Phytol.* **235** (3), 1246-12591, <https://nph.onlinelibrary.wiley.com/doi/10.1111/nph.18171>
9. Chiciudean, I., Russo, G., Bogdan, D.F., Levei, E.A., Faur, L., Hillebrand-Voiculescu, A., Moldovan, O.T., **Banciu, H.L.** (2022). Competition-cooperation in the chemoautotrophic ecosystem of Movile Cave-first metagenomic approach on sediments. *Environ Microbiome* **17** (1):44. <https://environmentalmicrobiome.biomedcentral.com/articles/10.1186/s40793-022-00438-w>
10. Szekeres, E., Baricz, A., Cristea, A., Levei, E.A., Stupar, Z., Brad, T., Kenesz, M., Moldovan, O.T., **Banciu, H.L.** (2023) Karst spring microbiome: Diversity, core taxa, and community response to pathogens and antibiotic resistance gene contamination, *Sci Total Environ* **895**: 165133, <https://doi.org/10.1016/j.scitotenv.2023.165133>

H-Index (WoS/Scopus/GS): 22/22/26

ResearcherID/Publons: <https://publons.com/researcher/2807715/horia-l-banciu/>

ORCID: <http://orcid.org/0000-0002-6563-3226>

Google Scholar: https://scholar.google.ro/citations?user=XW6_3FcAAAJ&hl=en

Personal homepage : <https://banciuhoria.wordpress.com/>

Extended list of publications

Contents:

- a) PhD Thesis;
- b) Books and book chapters;
- c) Articles published in peer-review journals;
- d) Publications in international proceedings;
- e) Publication in indexed and non-indexed journals and volumes.
- f) Patents

a) PhD Thesis

PhD in Biology – Delft University of Technology, The Netherlands – **November 1st, 2004.**

Title of PhD Thesis: **“Physiology of alkaliphilic sulfur-oxidizing bacteria from soda lakes”.**

(<https://repository.tudelft.nl/islandora/object/uuid%3Aaf937601-7857-4326-ae2c-fb6b02ba0b69>)

Supervisor: **Professor Gijs J. Kuenen.**

Doctoral title was recognized by the Romanian Ministry of Education, Research and Youth by the **Attestation No. 8472 / 27.04.2005.**

b) Books and book chapters:

b-1) Books

Banciu, H., L. „Physiology of alkaliphilic sulfur-oxidizing bacteria from soda lakes”, Optima Grafische Communicatie BV, Rotterdam, Olanda, 2004, pp. 154. **ISBN 90-77595-87-2.**

Tarba, C., **Banciu H., L.**, Biofizică. Editura Risoprint, Cluj-Napoca, 2010, pp. 216. **ISBN 978-973-53-0215-3**

b-2) Book chapters

Sorokin, D.Y., **Banciu, H.**, Robertson, L.A., Kuenen, J.G. (2006) Haloalkaliphilic Sulfur-Oxidizing Bacteria, in *The Prokaryotes: A Handbook on the Biology of Bacteria – 3rd Edition* (Dworkin, M., Falkow, S., Rosenberg, E., Schleifer, K.-H., Stackebrandt, E., Eds.) Springer-Verlag, New York, pp. 969-984. **ISBN 978-0387254999**

Sorokin, D.Y., **Banciu, H.**, Robertson, L.A., Kuenen, J.G., Muntyan, M.S., Muyzer, G. (2013) Halophilic and Haloalkaliphilic Sulfur-Oxidizing Bacteria, in *The Prokaryotes (4th Edition): Prokaryotic Physiology and Biochemistry* (Rosenberg, E., DeLong, E.F., Lory, S., Stackebrandt, E., Thompson, F., Eds.), Springer-Verlag, Berlin, pp. 529-554. **ISBN 978-3-642-30140-7.**

Banciu, H.L., Sorokin, D. (2014) Adaptation in Haloalkaliphiles and Natronophilic Bacteria, In: J. Seckbach, A. Oren and H. Stan-Lotter, Eds, „Polyextremophiles: Life Under Multiple Forms of Stress”, Cellular Origin, Life in Extreme Habitats and Astrobiology 27, Springer Science+Business Media, Dordrecht, pp. 121–178, **ISBN 978-94-007-6487-3.**

Andrei, A.-Ș. Bulzu. P.-A., **Banciu, H.L.** (2020) Blossoms of rot: microbial diversity of saline sapropels. In: Extremophiles as Astrobiological Models. J. Seckbach and H. Stan-Lotter (eds), Series Astrobiology Perspectives on Life of the Universe (Series editors R. Gordon and J. Seckbach), Wiley-Scivener, Beverly, MA, USA, **ISBN 978-1119591689**, pp.45-82. <https://doi.org/10.1002/9781119593096.ch3>

Tripon, A.M., Buda, D.M, **Banciu, H.L.**, Cristea, A. (2025). Polyhydroxyalkanoate Synthesis in Halotolerant and Halophilic Members of *Halomonadaceae* Family. pp 191-220. In: Khare, S., Karan, R., Sinha, R., Hemamalini, R. [eds.]. New Horizons in Halophilic Microbes and Their Enzymes. CRC Press, Boca Raton, FL, USA (in press). **ISBN: 978-1-032-67528-2** (Hardcover version), **ISBN: 978-1-003-46646-8** (Electronic version), DOI: 10.1201/9781003466468.

c) Articles published in peer-review journals

c-1) Articles published in journals with impact factor as main author

1. **Banciu, H.**, Sorokin, D.Y., Kleerebezem, R., Muyzer, G., Galinski, E.A., Kuenen, J.G. (2004) Growth kinetics of haloalkaliphilic sulfur-oxidizing bacterium *Thioalkalivibrio versutus* strain ALJ 15 in continuous culture, *Extremophiles* **8** (3): 185-192. <https://doi.org/10.1007/s00792-004-0376-5>
2. **Banciu, H.**, Sorokin, D.Y., Muyzer, G., Kleerebezem, R., Galinski, E.A., Kuenen, J.G. (2004) *Thioalkalivibrio halophilus* sp. nov., a novel obligately chemolithoautotrophic facultatively alkaliphilic and extremely salt-tolerant sulfur-oxidizing bacterium from a hypersaline alkaline lake. *Extremophiles* **8** (4): 325-334. <https://doi.org/10.1007/s00792-004-0391-6>
3. **Banciu, H.**, Sorokin, D.Y., Rijpstra, W.I., Sinninghe Damste, J.S., Galinski, E.A., Takaichi, S., Muyzer, G., Kuenen, J.G. (2005) Fatty acid, compatible solute and pigment composition of obligately chemolithoautotrophic alkaliphilic sulfur-oxidizing bacteria from soda lakes. *FEMS Microbiol Lett.* **243** (1):181-187. <https://doi.org/10.1016/j.femsle.2004.12.004>
4. **Banciu, H.L.**, Sorokin, D.Y., Tourova, T.P., Galinski, E.A., Muntyan, M.S., Kuenen, J.G., Muyzer, G. (2008) Influence of salts and pH on growth and activity of a novel facultatively alkaliphilic, extremely salt-tolerant, obligately chemolithoautotrophic sulfur-oxidizing Gammaproteobacterium *Thioalkalibacter halophilus* gen. nov., sp. nov. from South-Western Siberian soda lakes. *Extremophiles*. **12** (3), 391-404. <https://doi.org/10.1007/s00792-008-0142-1>
5. Andrei A.Ș., **Banciu H.L.**, Oren A. (2012) Living with salt: metabolic and phylogenetic diversity of archaea inhabiting saline ecosystems. *FEMS Microbiol Lett.* **330** (1), 1-9. <https://doi.org/10.1111/j.1574-6968.2012.02526.x>
6. Baricz, A., Coman, C., Andrei, A.Ș., Muntean, V., Keresztes, Z.G., Păusan, M., Alexe, M., **Banciu, H.L.** (2014) Spatial and temporal distribution of archaeal diversity in meromictic, hypersaline Ocnei Lake (Transylvanian Basin, Romania). *Extremophiles*, **18** (2): 399-413. <https://doi.org/10.1007/s00792-013-0625-6>
7. Baricz, A., Cristea, A., Muntean, V., Teodosiu, G., Andrei, A.-S., Molnar, I., Alexe, M., Rakosy-Tican, E., **Banciu, H.L.** (2015) Culturable diversity of aerobic halophilic archaea (Fam. *Halobacteriaceae*) from hypersaline, meromictic Transylvanian lakes. *Extremophiles*, **19** (2): 525-537. <https://doi.org/10.1007/s00792-015-0738-1>
8. Bartha, L., Sramkó, G., Volkova, P. A., Surina, B., Ivanov, A. L., **Banciu, H. L.** (2015) Patterns of plastid DNA differentiation in *Erythronium* (Liliaceae) are consistent with allopatric lineage divergence in Europe across longitude and latitude. *Plant Syst Evol*, **301** (6): 1747-1758. <https://doi.org/10.1007/s00606-014-1190-x>
9. Andrei, A.-Ș., Robeson, M.S., Baricz, A., Coman, C., Muntean, V., Ionescu, A., Etiope, G., Alexe, M., Sicora, C.I., Podar, M., **Banciu, H.L.** (2015). Contrasting taxonomic stratification of microbial communities in two hypersaline meromictic lakes. *ISME J.*, **9** (12): 2642-2656.
10. **Banciu, H.L.**, Muntyan, M.S. (2015). Adaptive strategies in the double-extremophilic prokaryotes inhabiting soda lakes. *Curr Opin Microbiol*, **25**: 73-79. <https://doi.org/10.1016/j.mib.2015.05.003>
11. Voica, D.M., Bartha, L., **Banciu, H.L.**, Oren, A. (2016). Heavy metal resistance in halophilic *Bacteria* and *Archaea*. *FEMS Microbiol. Lett.* 363(14). pii: fnw146. <https://doi.org/10.1093/femsle/fnw146> .
12. Andrei, A.Ș., Baricz, A., Păusan, M., Muntean, V., Sicora, C., Alexe, M., Rakosy-Tican, E., **Banciu, H.L.** (2017) Spatial distribution and molecular diversity of archaeal communities in the extreme hypersaline meromictic Brâncoveanu Lake (Transylvanian Basin, Romania). *Geomicrobiol. J.*, **34** (2): 130-138. <https://doi.org/10.1080/01490451.2016.1149527>
13. Andrei, A.-Ș., Păușan, M. R., Tămaș, T., Har, N., Barbu-Tudoran, L., Leopold, N., **Banciu, H. L.** (2017). Diversity and biomineralization potential of the epilithic bacterial communities inhabiting the oldest public stone monument of Cluj-Napoca (Transylvania, Romania). *Front Microbiol.*, **8**: 372. <https://doi.org/10.3389/fmicb.2017.00372>

14. Dina, N.E., Leș, A., Baricz, A., Szöke-Nagy, T., Leopold, N., Sârbu, C., **Banciu, H.L.** (2017) Discrimination of haloarchaeal genera using Raman spectroscopy and robust methods for multivariate data analysis. *J Raman Spectrosc.* **48** (8): 1122-1126. <https://doi.org/10.1002/jrs.5187>
15. Andrei, A.Ș., Baricz, A., Robeson, M.S., Păușan, M.R., Tămaș, T., Chiriac, C., Szekeres, E., Barbu-Tudoran, L., Levei, E.A., Coman, C., Podar, M., Banciu, H.L. (2017) Hypersaline sapropels act as hotspots for microbial dark matter. *Sci. Rep.* **7** (1): 6150. <https://doi.org/10.1038/s41598-017-06232-w>
16. Alexe, M., Șerban, G., Baricz, A., Andrei, A. Ș., Cristea, A., Băttes, K., Cîmpean, M., Momeu, L., Muntean, V., Porav, S.A., **Banciu, H. L.** (2018). Limnology and plankton diversity of salt lakes from Transylvanian Basin (Romania): A review. *J. Limnol.*, **77** (1): 17-34. <https://doi.org/10.4081/jlimnol.2017.1657>
17. Cristea, A., Baricz, A., Leopold, N., Floare, C., Borodi, G., Kacso, I., Tripon, S., Bulzu, P.-A., Andrei, A. Ș., Cadar, O., Levei, E. A., **Banciu, H.L.** (2018) Polyhydroxybutyrate production by an extremely halotolerant *Halomonas elongata* strain isolated from the hypersaline meromictic Fără Fund Lake (Transylvanian Basin, Romania). *J. Appl. Microbiol.*, **125** (5): 1343—1357. <https://doi.org/10.1111/jam.14029>
18. Bulzu, P.-A., Andrei, A.-Ș., Salcher, M.M., Mehrshad, M., Inoue, K., Kandori, H., Bějá, O., Ghai, R., **Banciu, H.L.** (2019) Casting light on Asgardarchaeota metabolism in a sunlit microoxic niche. *Nat. Microbiol.* **4**: 1129–1137. <https://doi.org/10.1038/s41564-019-0404-y>
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c-2) Articles published in journals with impact factor as coauthor

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6. Ionescu M.I., Costache A.Z., Oniga O., **Banciu H.L.**, Lupan I. (2013) Inhibition of *Streptococcus pneumoniae* adenylate kinase by some 5-arylidene-thiazolidin-4-on-2-thione derivatives. *Rev. Romana Med. Lab.*, **21** (1), 93-99.
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15. Inoue, K., Tsunoda, S.P., Singh, M., Tomida, S., Hososhima, S., Konno, M., Nakamura, R., Watanabe, H., Uchihashi, T., Bulzu, P.-A., **Banciu, H.L.**, Andrei, A.-Ș., Ghai, R., Béjà, O., Kandori, H. (2020) Schizorhodopsins: A novel family of rhodopsins from Asgard archaea that function as light-driven inward H⁺ pumps. *Sci. Adv.* **6**(15): #eaaz2441. DOI: <https://doi.org/10.1126/sciadv.aaz2441>.
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18. Gînguță, A., Rusu, I., Mircea, C., Ioniță, A., **Banciu, H.L.**, Kelemen, B. (2021). Mitochondrial DNA profiles of individuals from a 12th century necropolis in Feldioara (Transylvania). *Genes* **12**(3):436. <https://doi.org/10.3390/genes12030436> .
19. Gál, E. **Banciu, H.L.**, Ionescu, M.I., Năstasă, C.M. (2023) Antibacterial synergistic and antagonistic effects of commercial essential oils from *Thymus vulgaris* L. and *Syzygium aromaticum* L. in combination with *Nigella sativa* L. *Farmacia*, **71**(1): 97-108. <https://doi.org/10.31925/farmacia.2023.1.13>
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d) Publications in international proceedings

1. **Banciu H.**, Kleerebezem R., Muyzer G., Kuenen J.G., Sorokin D.Y. (2004) „Application of haloalkaliphilic sulfur-oxidizing bacteria for the removal of H₂S from gas streams”. In Verstraete W. (Ed) *Environmental Biotechnology ESEB 2004*, A.A.Balkema publishers, .Leiden, p. 345-348.
2. Cărunta, A., Mizeranschi, A E., Cărunta, C., **Banciu, H.L.**, Moldovan, O.T., Zaharie, D., Negru, V. (2024). An exploration of k-mer ranges for MEGAHIT in the context of microbial community-wide identification of antimicrobial resistance genes and biosynthetic gene clusters. In 2024 IEEE 24th International Conference on Bioinformatics and Bioengineering (BIBE), Kragujevac, Serbia, 2024, pp. 1-5, doi: 10.1109/BIBE63649.2024.10820451. <https://ieeexplore.ieee.org/abstract/document/10820451>

e) Publication in indexed and non-indexed journals and volumes

e-1) Publication in database-indexed journals as main author

1. **Banciu, H.** (2005) Sulfur cycle and trophic relationships among haloalkaliphilic sulfur bacteria. *Studia Univ Babes-Bolyai, Biologia*, **50** (1), 99-108
2. **Banciu, H.** (2005) Taxonomy and physiology of the obligately chemolithoautotrophic, alkaliphilic sulfur-oxidizing bacteria from soda lakes. *Studia Univ Babes-Bolyai, Biologia*, **50** (2), 221-236
3. **Banciu, H.**, Banciu, M., Olaru, F., Bîc, V., Petrescu, I. (2005) Biotechnology of chicken eggs: neverending opportunities. *Scripta Ornitol. Romaniae*, Vol. II, 86-103
4. **Banciu, H.** (2006) Haloalkaliphilic sulfur-oxidizing bacteria: taxonomy, physiology and biotechnological potential. *Studii si cercetari, Seria Biologie – Muzeul Bistrita-Nasaud*, **12**, p. 4-15
5. **Banciu, H.**, Olaru, F., Hengst, V., Banciu, M., Petrescu, I., Mocanu, A., Tarba, C., Yupsanis, T., Tomoaia-Cotisel, M., (2007) Partial biochemical characterization of storage protein from aleurone cells of barley (*Hordeum vulgare* L.). *Studia Univ Babes-Bolyai, Biologia*, **52** (1), 37-45
6. Miclea A., Van der Star, W.R.L., Kleerebezem R., **Banciu H.** (2009) Anammox process and its applications in wastewater treatment. *Studia Univ Babes-Bolyai, Biologia*, **54** (2), 97-110
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9. **Banciu H. L.** (2018) The Saline Organic-Rich Sediments: A Short Overview, *Aerul si Apa: Componente ale Mediului/ Air and Water: Components of the Environment*, ISSN 2067-743X, pp 129-135.
10. Bulzu P.-A., Cristea, A., Buda, D.M., **Banciu, H.L.** (2019) Asgardarchaeota – A Novel Prokaryotic Group discovered in Aquatic Sediments that might shed Light on the Origin and Early Evolution of Eukaryotes. *Aerul si Apa: Componente ale Mediului/ Air and Water: Components of the Environment*, ISSN 2067-743X, pp 435-446. doi: 10.24193/AWC2019_43.

11. Buda, D.M., Bulzu P.-A., Cristea, A., **Banciu, H.L.** (2019) The Saline Aquatic Systems as 'Natural Reservoirs' for Microorganisms with Current and Potential Applications. *Aerul si Apa: Componente ale Mediului/ Air and Water: Components of the Environment*, ISSN 2067-743X, pp. 427-434. doi: 10.24193/AWC2019_42.
12. **Banciu, H.L.**, Oren, A. (2019) About Halophiles 2019. *Studia UBB Biologia*, 64 (1):19-23.
13. Panait, D. F., Panait, A. M., Cristea, A., Levei, E. A., Moldovan, O. T., Banciu, H. L. (2025). Community-level physiological profiling of carbon substrate metabolization by microbial communities associated to sediments and water in karstic caves from Romania. *Studia UBB Biologia*, **70** (1), *in press*.

e-2) Publication in database-indexed journals as coauthor

14. Ionescu, M., Rădulescu, A. Z., Moldovan, C., **Banciu, H. L.**, Ghiran, D (2005) Efectul inhibitor al unor 5-ariliden-tiazolidin-4-ceto-2-tione asupra adenilat kinazei din *Escherichia coli* . *Clujul Medical*, **78** (3), 638-641
15. Olaru, F., Sesărman, A., **Banciu, H.**, Banciu, M., Petrescu, I. (2008) Spectrofluorometric analysis of chicken IgY stability after urea treatment. *Studia UBB Biologia*, **53** (1), 51-58
16. Rusu M., **Banciu H.L.**, Banciu M., Brad T., Moldovan. O.T. (2010) Oxidative stress enzymes as biomarkers of heavy metal pollution in interstitial invertebrates. *Studia UBB Biologia*, **55** (2), 61-66.

e-3) Other publications as main author

17. **Banciu, H.** (2000) *Archaea*- general and phylogenetic aspects. *Evolution and Adaptation*, T.6, 233-245.
18. **Banciu H.** (2009) Dancing in the soda with the haloalkaliphilic sulfur-oxidizing bacteria. *RBCAR Newslett.*, **1** (2), 5-7.

f) Patents

Title of the invention: "Expeditionary method for in-situ testing of E. coli and total coliform contamination in water intended for human consumption." Patent registration number at OSIM: A100050, dated 07.02.2023. Designated inventors: Zamfira Stupar, Erika Levei, Oana Teodora Moldovan, Rannveig Øvrevik Skøglund, and **Horia Leonard Banciu**. Abstract published in: Official Bulletin of Industrial Property no. 8/2024, p. 22.

Other selected professional achievements

- Main coordinator of the Master's Programme Bioinformatics Applied in Life Sciences (English), Faculty of Biology and Geology, Babeş-Bolyai University, Cluj-Napoca (2023-Present).
- PhD supervisor with 7 doctoral theses successfully completed by 2024.
- Founding member of the Romanian Society of Bioinformatics (RSBI).
- Scientific editor and volume coordinator for the proceedings of the 2nd RoBioinfo Conference 2024:
 - Banciu H., Zenoaga-Barbăroşie C., Giurgiu M. (Eds.). Accelerating Human and Environmental Knowledge Discovery Through Bioinformatics Advances. 2nd RoBioinfo Conference, 11–13 April 2024, Cluj-Napoca, Romania. Editura Universitară, Bucureşti, 2024, 115 pp. ISBN: 978-606-28-1795-4. <https://www.doi.org/10.5682/9786062817954>
- Reviewer for international funding agencies, including:
 - National Research, Development and Innovation Office (NKFIH), Hungary
 - French National Research Agency (ANR)
- Delivered *laudatio* addresses for Doctor Honoris Causa awards at Babeş-Bolyai University, Cluj-Napoca, honoring:
 - Prof. Aharon Oren (Hebrew University of Jerusalem, Israel)
 - Sir Richard Timothy Hunt (Nobel Laureate, Francis Crick Institute, UK)

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