

A N E X A 4 . 1

Nume Prenume: Banciu Horia Leonard

Gradul didactic: Profesor Univ.

Instituția unde este titular: Universitatea „Babeș-Bolyai” din Cluj-Napoca

Facultatea: Biologie și Geologie

Departamentul: Biologie moleculară și biotehnologie

L I S T A**lucrărilor științifice în domeniul disciplinelor din postul didactic****A. Teza de doctorat**

Doctor in Biologie al Universității Tehnice Delft, Olanda – 1 Noiembrie 2004.

Titlul tezei: “Physiology of alkaliphilic sulfur-oxidizing bacteria from soda lakes”.

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

Conducător științific: Prof. Dr. Gijs J. Kuenen.

Titlul a fost recunoscut de Ministerul Educației, Cercetării și Tineretului din România prin Atestatul Nr. 8472 din 27.04.2005.

B. Cărți și capitole în cărți publicate în ultimii 10 ani

1. **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.

2. 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>

C. Lucrări indexate ISI/BDI publicate în ultimii 10 ani

1. 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>
2. Baricz, A., Cristea, A., Muntean, V., Teodosiu, G., Andrei, A.-Ș., 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>

3. 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.
4. Coman, C., Chiriac, C.M., Robeson, M.S., Ionescu, C., Dragos, N., Barbu-Tudoran, L., Andrei, A.-S., **Banciu, H.L.**, Sicora, C., Podar, M. (2015) Structure, mineralogy and microbial diversity of geothermal spring microbialites associated with a deep oil drilling in Romania. *Front Microbiol*, 6: 253.
5. 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. <https://doi.org/10.1038/ismej.2015.60>
6. **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>
7. Sorokin, D.Y., **Banciu, H.L.**, Muyzer, G. (2015). Functional microbiology of soda lakes. *Curr Opin Microbiol*, 25: 88-96. <https://doi.org/10.1016/j.mib.2015.05.004>
8. Bartha, L., Stepanov, N. V., Rukšāns, J., **Banciu, H.L.**, Keresztes, L. (2015). Non-monophyly of Siberian *Erythronium* (Liliaceae) leads to the recognition of the formerly neglected *Erythronium sajanense*. *J Plant Res*, 128 (5): 721-729.
9. Ionescu, M., Rădulescu, A.Z., Oniga, S., **Banciu, H.L.**, Lupan, I. (2015). Inhibition of *Streptococcus pneumoniae* and *Escherichia coli* adenylate kinase by 2-amino-4-methyl-n'-arylidene-thiazole-5-carbohydrazides. *Farmacia*, 63 (3): 338-342.
10. 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>.
11. 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>
12. 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>.
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14. Dina, N.E., Leș, A., Baricz, A., Szoke-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.
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

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 17. Bercea, S., Năstase-Bucur, R., Mirea, I. C., Măntoiu, D. Ș., Kenesz, M., Petculescu, A., Baricz, A., Andrei, A.-Ș., **Banciu, H.L.**, Papp, B., Constantin, S. Moldovan, O. (2018). Novel approach to microbiological air monitoring in show caves. *Aerobiologia*, 34(4): 445–468.
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 19. 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>.
 20. Bulzu, P.-A., Andrei, A.-Ș., Salcher, M.M., Mehrshad, M., Inoue, K., Kandori, H., Bėjă, 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>.
 21. Buda, D.M., Bulzu, P.-A., Barbu-Tudoran, L., Porfire, A., Pătraș, L., Sesărman, A., Tripon, S., Șenilă, M., Ionescu, M.I., **Banciu, H.L.** (2019) Physiological response to silver toxicity in the extremely halophilic archaeon *Halomicrobium mukohataei*. *FEMS Microbiol. Lett.* 366(18): fnz231. <https://doi.org/10.1093/femsle/fnz231>.
 22. Moldovan, O.T., Øvrevik Skoglund, R., **Banciu, H.L.**, Dinu Cucoș, A., Levei, E.A., Perșoiu, A., Lauritzen, S.-E. (2019) Monitoring and risk assessment for groundwater sources in rural communities of Romania (GROUNDWATERISK). *Research Ideas and Outcomes* 5: e48898. <https://doi.org/10.3897/rio.5.e48898>
 23. **Banciu, H.L.**, Enache, M., Montalvo-Rodriguez, R., Oren, A., Ventosa, A. (2019) Ecology and physiology of halophilic microorganisms - Thematic issue based on papers presented at Halophiles 2019 – 12th International Conference on Halophilic Microorganisms, Cluj-Napoca, Romania, 24-28 June, 2019. *FEMS Microbiol Lett.* 366(23), fnz250. <https://doi.org/10.1093/femsle/fnz250>
 24. 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., Bėjă, 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>.
 25. Salcher, M.M., Andrei, A.-Ș., Bulzu, P.-A., Keresztes Z.G., **Banciu, H.L.**, Ghai, R., (2020) Visualization of Lokiarchaeia and Heimdallarchaeia (Asgardarchaeota) by fluorescence in situ

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- mSphere*
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 27. Baricz, A., Chiriac, C.M., Andrei, A.-Ș., Bulzu, P.-A., Levei, E.A., Cadar, O., Battes, K.P., Cîmpean, M., Șenilă, 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.** (2021) 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>.
 28. Șuteu, A.M., Momeu, L., Battes, K.P., Baricz, A., Cristea, A., Bulzu, P.-A., Buda, D.M., **Banciu, H.L.**, Cîmpean, M. (2021) Diversity and distribution of phototrophic primary producers in saline lakes from Transylvania, Romania. *Plant Syst Evol* 307 (12). <https://doi.org/10.1007/s00606-020-01733-0>
 29. 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>.
 30. Baricz, A., Levei, E. A., Șenilă, M., Pînzaru, S. C., Aluaș, M., Vulpoi, A., Filip, C., Tripon, C., Dădărlat, D., **Buda, D.M.**, Dulf, F.V., Pintea, A., Cristea, A., Muntean, V., Keresztes, Z.G., Alexe, M., Banciu, H.L. (2021). Comprehensive mineralogical and physicochemical characterization of recent sapropels from Romanian saline lakes for potential use in pelotherapy. *Sci Rep* 11, 18633. <https://doi.org/10.1038/s41598-021-97904-1>
 31. Cristea, A., Pustan, M., Bîrleanu, C., Dudescu, C., Floare, C. G., Tripon, A. M., **Banciu, H.L.** (2022). Mechanical evaluation of solvent casted poly (3-hydroxybutyrate) films derived from the storage polyesters produced by *Halomonas elongata* DSM 2581T. *J Polym Environ*, 30 (1), 424-430. <https://doi.org/10.1007/s10924-021-02204-4>
 32. 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://doi.org/10.1111/nph.18171>
 33. **Banciu, H.L.**, Gridan, I.M., Zety, A.V., Baricz, A. (2022) Asgard archaea in saline environments. *Extremophiles*. 26:21 <https://doi.org/10.1007/s00792-022-01266-z>.
 34. 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>.
 35. Bogdan, D.F., Baricz, A., Chiciudean, I., Bulzu, P.-A., Cristea, A., Năstase-Bucur, R., Levei, E.A., Cadar, O., Sitar, C., **Banciu, H.L.**, Moldovan, O.T. (2023) Diversity, distribution and organic

- substrates preferences of microbial communities of a low anthropic activity cave in North-Western Romania. *Front Microbiol* 14:962452. <https://doi.org/10.3389/fmicb.2023.962452>
36. 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://farmaciajournal.com/issue-articles/antibacterial-synergistic-and-antagonistic-effects-of-commercial-essential-oils-from-thymus-vulgaris-l-and-syzygium-aromaticum-l-in-combination-with-nigella-sativa-l/> . <https://doi.org/10.31925/farmacia.2023.1.13>
 37. Viver, T., Conrad, R. E., Lucio, M., Harir, M., Urdian, M., Gago, J.F., Suárez-Suárez, A., Bustos-Caparrós, E., Sanchez-Martinez, R., Mayol, E., Fassetta, F., Pang, J., Gridan, I.M., Venter, S., Santos, F., Baxter, B., Llamas, M.E., Cristea, A., **Banciu, H.L.**, Hedlund, B.P., Stott, M.B., Kämpfer P., Amann, R., Schmitt-Kopplin, P., Konstantinidis, K.T., Rossello-Móra, R. (2023) Description of two cultivated and two uncultivated new *Salinibacter* species, one named following the rules of the bacteriological code: *Salinibacter grassmerensis* sp. nov.; and three named following the rules of the SeqCode: *Salinibacter pepae* sp. nov., *Salinibacter abyssi* sp. nov., and *Salinibacter pampae* sp. nov.. *Syst Appl Microbiol*, 46: 126416. <https://doi.org/10.1016/j.syapm.2023.126416>
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 39. Buda, D.M., Szekeres, E.K., Barbu, L., Esclápez, J., **Banciu, H.L.** Genome-wide transcriptional response to silver stress in extremely halophilic archaeon *Haloferax alexandrinus* DSM 27206T. *BMC Microbiol*. 23: 381. <https://doi.org/10.1186/s12866-023-03133-z>
 40. Timmis, K., Hallsworth, J.E., McGenity, T.J., Armstrong, R., Colom, M.F., Karahan, Z.C., ..., **Banciu, H.L.**, ... & Serna, J. G. (2024). A concept for international societally relevant microbiology education and microbiology knowledge promulgation in society. *Microb Biotechnol*, 17(5), e14456. <https://doi.org/10.1111/1751-7915.14456>
 41. Mirăuță, B., Zenoaga-Barbăroșie, C., Abrudan, M., Mihășan, M., Giurgiu, M., Mihalachi, D., Lazăr, M.D., RSBI Members, **Banciu, H.L.** (2024). From the establishment of a national bioinformatics society to the development of a national bioinformatics infrastructure. *F1000Research*, 13: 1002. <https://doi.org/10.12688/f1000research.153895.1> .
 42. Boukheloua, R., Mukherjee, I., Park, H., Šimek, K., Kasalický, V., Ngochera, M., Grossart, H.-P., Picazo-Mozo, A., Camacho, A., Cabello-Yeves, P. J., Rodriguez-Valera, F., Callieri, C., Andrei, A.-S., Pernthaler, J., Posch, T., Alfreider, A., Sommaruga, R., Hahn, M. W., Sonntag, B., Lopez-Garcia, P., Moreira, D., Jardillier, L., Lepère, C., Biderre-Petit, C., Bednarska, A., Ślusarczyk, M., Tóth, V. R., **Banciu, H. L.**, Kormas, K., Orlic, S., Šantić, D., Muyzer, G., Herlemann, D. P. R., Tammert, H., Bertilsson, S., Langenheder, S., Zechmeister, T., Salmaso, N., Storelli, N., Capelli, C., Lepori, F., Lanta, V., Henriques Vieira, H., Kostanjšek, F., Kabeláčová, K., Chiriac, M.-C., Haber, M., Shabarova, T., Fernandes, C., Rychtecký, P., Znachor, P., Szőke-Nagy, T., Layoun, P., Wong, H. L., Silva Kavagutti, V., Bulzu, P.-A., Salcher, M. M., Piwosz, K., Ghai, R. (2024) Global

freshwater distribution of Telonemia protists. ISME J, wrae177, <https://doi.org/10.1093/ismejo/wrae177>

43. Mircea, C., Drăghici, I., Levei, E.A., Cristea, A., Gridan, I.M., Zety, A.V., **Banciu, H.L.** (2024). The fungal side of the story: Saprotrophic- vs. symbiotrophic-predicted ecological roles of fungal communities in two meromictic hypersaline lakes from Romania. Microb Ecol 87, 130. <https://doi.org/10.1007/s00248-024-02446-4>

D. Lucrări publicate în ultimii 10 anii în reviste și volume de conferințe cu referenți (neindexate)

- Reviste

1. Cristea, A., Andrei, A.-Ș., Baricz, A., Muntean, V., **Banciu, H.L.** (2014) Rapid assessment of carbon substrate utilization in the epilimnion of meromictic Ursu lake (Sovata, Romania) by the BIOLOG ECO PLATE™ approach. Studia UBB Biologia, 59(1): 41-53.
2. **Banciu, H.L.** (2017) In memoriam: Professor Emeritus Constantin Crăciun (15 September 1937 – 25 November 2016). Studia UBB Biologia, 62(1): 5-7. http://studia.ubbcluj.ro/download/pdf/Biologia_pdf/2017_1/01.pdf
3. **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.
4. 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.
5. 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.
6. **Banciu, H.L.**, Oren, A. (2019) About Halophiles 2019. Studia UBB Biologia, 64(1): 19-23.

- Selecție cu maximum 20 lucrări în volume de conferințe

1.

E. Brevete obținute în întreaga activitate

1. Titlul invenției „Metodă expediționară de testare in-situ a contaminării cu E. coli și coliformi totali din ape destinate consumului uman”. Numar de inregistrare a brevetului la OSIM: A100050 din data de 07.02.2023. Inventatori desemnati: Stupar Zamfira, Levei Erika, Moldovan Oana Teodora, Skøglund Rannveig Øvrevik si **Banciu Horia Leonard**. Rezumat publicat în Buletinul Oficial de Proprietate Industrială nr. 8/ 2024, p. 22.

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Semnătura:





E – Brevete (pentru întreaga activitate)entru întreaga activitate)