

Curriculum vitae Europass

Personal information

First name/Surname

Cristina PURCAREA



Address

Department of Microbiology, Institute of Biology Bucharest of the Romanian Academy
296 Splaiul Independentei, Bucharest 060031, Romania

Telephone

+40 746 151 081

E-mail

cristina.purcarea@ibiol.ro; cristinapurcarea5@gmail.com

Nationality

Romanian

Date of birth

16/01/1965

Gender

F

Position

Senior research scientist grade I, Institute of Biology Bucharest of the Romanian Academy

Interest

Extremophilic microorganisms, microbial diversity, ecology and evolution. Genetic diversity and population dynamics of microorganisms in Polar and alpine glacial environments. Structure-function relationship in extremozymes. Regulation of biodiversity and adaptability of microbial communities to external stress factors. Nanotechnologies and medical applications of extremophiles and extremozymes. Forensic microbiology.

Work experience

Dates

2007 - present

Occupation or position held

Senior research scientist grade I

ORCID

<https://orcid.org/0000-0001-5784-8545>

Main activities and responsibilities

Head of the Laboratory of Molecular Microbiology and Biochemistry of Extremophiles, Antarctic, Arctic and ice cave microbiology and molecular biology, archaea, marine invertebrates microbiome, diversity, thermal adaptation mechanisms, extremozymes. Scientific Leader of ROICE Antarctic Expeditions (2015-2016). Author of 81 publications (69 WOS), 7 book chapters, and 6 patent applications, with 1040 WOS citations, H-index of 20 (WOS) and of 23 (Google Scholar). 25 competitively funded national and international research projects and fellowships. Extended research experience (15 years) at leading universities in France, USA and Belgium.

Name and address of employer

Department of Microbiology, Institute of Biology Bucharest of the Romanian Academy
296 Splaiul Independentei, Bucharest 060031, Romania

Type of business or sector

Research Institute of the Romanian Academy

Dates

2005 – 2007

Occupation or position held

Senior research scientist grade III

Main activities and responsibilities

Research: microbiology and cell biology
PI of a research grant

Name and address of employer

Institute of Cellular Biology and Pathology “N. Simionescu”, Bucharest, Romania

Type of business or sector

Research Institute of the Romanian Academy

Dates	2003 – 2005 and 1997-2001
Occupation or position held	Research Associate
Main activities and responsibilities	Research: protein biochemistry and microbiology of extremophiles, protein x-ray crystallography, thermal adaptation, phylogeny, archaea
Name and address of employer	Department of Biochemistry and Molecular Biology, Wayne State University School of Medicine, 540 E. Canfield Avenue, Detroit, MI 48201, USA
Type of business or sector	University
Dates	2001-2003
Occupation or position held	Researcher, Project manager, Product Manager
Main activities and responsibilities	Research, project manager: drug-target recombinant protein synthesis Product manager: proprietary bacterial strains distribution
Name and address of employer	Avidis S.A., Clermont-Ferrand, France
Type of business or sector	Biotechnology start-up company
Dates	1995 – 1996
Occupation or position held	Postdoctoral Fellow
Main activities and responsibilities	Research: cloning of archaeal genes, extremophiles microbiology and molecular biology
Name and address of employer	Department of Microbiology, Vrije University of Brussels (VUB), 1 E. Gryson Avenue, Brussels1070, Belgium
Type of business or sector	University
Dates	1990 – 1993
Occupation or position held	Research Scientist
Main activities and responsibilities	Research: proteins and liposomes biochemistry
Name and address of employer	Institute of Biochemistry, 296 Splaiul Independentei, 060031 Bucharest, Romania
Type of business or sector	Research Institute of the Romanian Academy
Dates	1988 - 1990
Occupation or position held	Biologist
Main activities and responsibilities	Monitoring Water Purification Processes
Name and address of employer	Petrochemical Plant and Refinery Brazi, Prahova county, Romania
Type of business or sector	Company

Education and training

Dates	1991-1995
Title of qualification awarded	PhD Enzymology
Principal subjects/occupational skills covered	Enzymes from hyperthermophilic deep-sea barophilic archaea, microbiology, biochemistry, enzyme thermal adaptation and phylogeny
Name and type of organisation providing education and training	University Paris Sud (XI), Orsay, France
Level in national or international classification	Rank no. 37 in ARWU2012 (Shanghai Top 500).
Dates	1990 - 1991
Title of qualification awarded	Masters (Diplôme d'Etude Approfondie) in Enzymology

Principal subjects/occupational skills covered	Pyrimidine biosynthesis in a hyperthermophilic deep-sea archaea, microbiology, protein biochemistry																																								
Name and type of organisation providing education and training	University Paris Sud (XI), Orsay, France																																								
Level in national or international classification	Rank no. 37 in ARWU2012 (Shanghai Top 500).																																								
Dates	1983 - 1988																																								
Title of qualification awarded	BSc in Biochemistry																																								
Principal subjects/occupational skills covered	Biochemistry, physiology, microbiology, molecular biology, chemistry, biotechnology																																								
Name and type of organisation providing education and training	Politechnical Institute of Bucharest, Faculty of Biochemistry, Bucharest, Romania.																																								
Level in national or international classification	Top 3 Universities in Romania																																								
Personal skills and competences																																									
Mother tongues	Romanian																																								
Other languages	English, French																																								
Self-assessment																																									
European level (*)																																									
English																																									
French																																									
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	(*) Common European Framework of Reference for Languages																																								
Social skills and competences	Team player, good communication skills, ability to adapt to different cultural environments, flexible and open mind, ability to solve tasks individually, imaginative.																																								
Organizational skills and competences	Research field trips organization in ice cave (Romania), Scientific Leader of ROICE 2015 and ROICE 2016 Antarctic expeditions, workshop organization (Annex 3), laboratory leader (people and resources), PhD advisor, research grants management (Annex 3), French biotechnology company research and product manager, research committees member (Annex 4)																																								
Technical skills and competences	<i>Research</i> - 35 years experience in academic and biotechnology company laboratories from Romania (20 years), France (7 years), Belgium (1 year), USA (7 years): protein biochemistry, molecular microbiology, molecular biology, enzymology, biophysics, X-ray crystallography. <i>Fieldwork</i>: caves - Romania, Norway, and glaciers – Antarctica, Arctica, Argentina – molecular microbiology, ice cave ecosystems, speleology <i>Equipment usage</i>: ice-drilling system, PCR, qPCR, sequencing, aerobic and anaerobic cultivation, microscopy, spectroscopy, chromatography FPLC, HPLC, flow cytometer																																								
Computer skills and competences	Windows and Mac OS X - current usage of various software																																								
Artistic skills and competences	Writing																																								
Other skills and competences	Mountaineering, ski																																								
Driving license	B																																								

Additional information

Hirsch index = 20 (WOS), 23 (Google scholar)

Current research programs:

- 2026-2030 National Multidisciplinary Research Centre of Excellence for Drug-Resistant Infections - ARES (**PN-IV-P6-6.1-CoEx-2024-0196**, Project 17/CoEx/2026, Key person)
- 2021-2023 Portable biosensor coupled with a sampling drone for the in situ assessment of seawater toxicity MOBILTOX (**ERANET-MARTERA-MOBILTOX-2-224**, Partner PI)
- 2020-2022 Silymarin content enrichment for vegetal waste valorization in cold-pressed milk thistle oil technology SYMPLUS (**PN-III-P2-2.1-PED-2019-2461**, PI)
- 2020-2022 Selective extremozyme-based platform for aldehydes detection in air in a wide temperature range ALDSENS (**PN-III-P2-2.1-PED2019-2746**, Partner PI)
- 2020-2023 Innovative enzymatic coatings for electrochemical interfaces. (**ERANET-M-ENZ4IFACES**, Partner PI)
- 2016-2020 Microorganisms in warming Arctic environments (**H2020-ITN**, Partner PI)
- 2017-2018 Novel aldehyde dehydrogenase from Antarctic bacterium as highly efficient catalyst for low temperature biosensing and biotechnologies COLDSSENSOR (**PN-III-P2-2.1-PED-2016-0116**, PI)
- 2016-2018 Cave ice microbiom: metabolic diversity and activity in response to climate dynamics and anthropogenic pollution CAVICE (**ELAC2014/DCC-0178/FP7 – Joint Calls**, PI)
- 2012-2016 Biodiversity and chronological distribution of microorganism in perennial ice deposits from Scărișoara Ice Cave, Romania (**PN-II-ID-PCE-2011-3-074**, PI)
- 2012-2016 Microbial diversity and resilience within hydrothermal sulfurous deposits from Baile Herculane, Romania (**PN-II-PT-PCCA-2011-3.1-1619**, Partner PI)
- 2012-2016 Bacterial growth quantification (**PN-II-RU-TE-2012-3-0402**, Member)
- 2009-2011 Hyperthermophilic archaeal nitroreductases for biotechnological applications: cloning, bacterial expression and crystallization (**PN-II-PT-PCCA-2008-32-142**, Partner PI)
- 2008-2011 Study of ammonia metabolism from intestinal archaea: evolution of carbamoyl phosphate synthetases and obesity control mechanisms (**PN-II-ID-PCE-2009-1023**, PI)

Annexes

- Annex 1: Publications
- Annex 2: Conferences
- Annex 3: Financed research grants
- Annex 4: Synergistic activities and affiliations
- Annex 5: Honors and awards

PUBLICATIONS

Book chapters

1. **Purcarea C**, Necula-Petrareanu G, Vasilescu A (2019) *Extremophile-assisted nanomaterial production and nanomaterial-based biosensing*. in Functional nanostructured interfaces for environmental science and biomedical applications. (Ed. Sucnea and Dinca). Elsevier, p 153-180.
2. Paun VI, Necula-Petrareanu G, Mondini A, **Purcarea C** (2018) Aspartate transcarbamoylase obtained from a psychrophilic bacterium (*Rugamonas sp.*) isolated from an Antarctic lake. In The novel results of the Institute of Biology Bucharest into fields of Ecology, Microbiology and Citobiology, Ed. Ars Docendi, Bucuresti. ISBN 978-606-998-044-6
3. Mondini A, **Purcarea C** (2018) Cold-active proteins from psychrophilic microorganisms. In The novel results of the Institute of Biology Bucharest into fields of Ecology, Microbiology and Citobiology, Ed. Ars Docendi, Bucuresti. ISBN 978-606-998-044-6
4. **Purcarea C** (2018) *Microbial Life in Ice Caves*. in Perşoiu, A. and Lauritzem S.-E., Ice caves, Elsevier, p 173-187. ISBN 9780128117392, eBook ISBN: 9780128118573
5. Vasilescu A, Mihai I, Vezeanu A, Andrei V, Nedelcu G, Popa E, **Purcarea C**, Subramanian P, Coffinier Y, Boukheroub R, Szunerits S (2014) A new nanomaterial for the study of protein interactions" in "New Applications of Nanomaterials, Series in Micro and Nanoengineering 22, Eds. Alina Catrinel Ion, Dan Dascalu, Gabriela Carja, Magdalena Lidia Ciurea, Ed. Acad. Romane, ISBN: 978-973-27-2434-7
6. **Purcarea C** (2009) Adaptari moleculare la temperaturi inalte. Vol. Adaptarea la stres: conditie de supravietuire si/sau factor de biodiversitate. Ed. Acad. Romane. p 43-50 (Romanian)
7. **Purcarea, C.** (2001) *Aspartate transcarbamoylase from Pyrococcus abyssi*, vol. Hyperthermophilic Enzymes in *Methods in Enzymology* (Ed. M.W.W. Adams and R.M. Kelly), Acad. Press, San Diego, CA, U.S.A., vol 331, p 248-270

Articles

1. Ruginescu R, Necula-Petrareanu G, Tudorache M, Matei M, Muresan M, **Purcarea C** (2026) Identification and characterization of R75estA, a halophilic polyester-degrading enzyme from a marine bacterium. *Front. Microbiol.* 17:1870101. doi: 10.3389/fmicb.2026.1870101
2. Ruginescu R, Banciu RM, Gáspár S, **Purcarea C**, Vasilescu A. *Coccomyxa sp.* LT4 Thylakoids from Scarisoara Ice Cave as a Promising Bioreceptor for the Detection of Diuron: Comparison with *Synechococcus elongatus* PCC 7942. *Chemosensors*. 2026; 14(5):113. <https://doi.org/10.3390/chemosensors14050113>
3. Lavin P, Chen Z, Wong CMVL, Teoh CP, Fierro-Vásquez N, Osés R, Banerjee A, Cabrera-Barjas G, **Purcarea C.** (2026) Untapped Potential of the Antarctic Strain *Actinacidiphila fildesensis* DEC002: Integrative Genome Analysis and Functional Profiling. *Diversity*. 18(4):236. <https://doi.org/10.3390/d18040236>
4. Paun VI, Itcus C, Lavin P, Chifiriuc MC, **Purcarea C** (2026) First genome sequence and functional profiling of Psychrobacter SC65A.3 preserved in 5,000-year-old cave ice: insights into ancient resistome, antimicrobial potential, and enzymatic activities. *Front. Microbiol.* 16:1713017. doi: 10.3389/fmicb.2025.1713017
5. Ftodiev A, Necula-Petrareanu G, Puiu M, Proteasa G, Munteanu CVA, Banciu RA, Chauhan R, Visinescu D, **Purcarea C**, Fanjul Bolado P, Ibañez D, Fogel R, Limson J, Potara M, Astilean S, Bala C, Alina Vasilescu (2025) Comprehensive analysis of the inhibition of aldehyde dehydrogenase from *Flavobacterium PL002* and its coupling with SERS as a path for the selective detection of thiram. *Methods*, S1046-2023(25)00214-2. doi: 10.1016/j.ymeth.2025.10.006
6. Menabit S, Lavin P, Begun T, Teacă A, Mureşan M, **Purcarea C.** (2025) Organ-specific bacterial communities of the soft-shell clam *Mya arenaria* (Linnaeus, 1758) and adjacent sediments in the Black Sea. *Front. Mar. Sci.* 12. doi: 10.3389/fmars.2025.1659674
7. Chirea ET, Ionetic EC, Angelescu IR, Grosu-Tudor SS, **Purcarea C**, Zamfir M (2025) Exploring the bacteriocinogenic properties of *Lactococcus lactis* R152 isolated from a traditionally made cheese. *Scientific Bulletin. Series F. Biotechnologies*, 29(1):68-74
8. Copoiu DS, Lavin P, Itcus C, **Purcarea C** (2025) Patterns of Insect Distribution in Fruit Trees of South Romania and Their Role as Bacterial Vectors. *Diversity*. 17(4):295. <https://doi.org/10.3390/d17040295>
9. Paun VI, Ion SG, Gheorghita GR, Podolean I, Tudorache M, **Purcarea C.** (2024) Cold-active lipase from the ice cave Psychrobacter SC65A.3 strain, a promising biocatalyst for silybin acylation. *Molecules* 29(21): 5125 <https://doi.org/10.3390/molecules29215125>
10. Chauhan R, Fogel R, Ibañez D, Fanjul-Bolado P, **Purcarea C**, Necula-Petrareanu G, Vasilescu A, Limson A. (2024) Electrochemical characterization of carbon black in different redox probes and their application in electrochemical sensing. *Carbon Trends*. 17, 100408, <https://doi.org/10.1016/j.cartre.2024.100408>.
11. Ruginescu R, **Purcarea C** (2024) Plastic-Degrading Enzymes from Marine Microorganisms and Their Potential Value in Recycling Technologies. *Marine Drugs*. 22(10), 441-472; <https://doi.org/10.3390/md22100441>
12. **Purcarea C**, Ruginescu R, Banciu RM, Vasilescu A (2024) Extremozymes-based biosensors for environmental pollution monitoring: recent developments. *Biosensors* 14(3), 143 <https://doi.org/10.3390/bios14030143>

13. Menabit S, Lavin P, Begun T, Mureșan M, Teacă A, **Purcarea C.** (2024) First screening of bacteria assemblages associated with the marine polychaete *Melinna palmata* Grube, 1870 and adjacent sediments. *Frontiers in Marine Science*. 10:1279849. doi: 10.3389/fmars.2023.1279849
14. Teoh Chui Peng, Paris Lavin, Rómulo Osés Pedraza, Natalia Fierro-Vásquez, Cristina **Purcarea**, Sheau Ting Yong, Clemente M.V.L. Wong (2024) Draft genome sequence data of Antarctic *Penicillium* sp. strain E22, from Deception Island. *Data in Brief*, 53: 110143, doi: 10.1016/j.dib.2024.110143
15. Copoiu DS, **Purcarea C** (2023) First report on the presence of *Botanophila fugax* (Meigen, 1826) (Diptera: Anthomyiidae) in Romania, *Romanian Journal of Biology - Zoology*, 68(1-2): 11–18.
16. Astudillo-Barraza D, Osés R, Henríquez-Castillos C, Wong CMLW, Pérez-Donoso JM, **Purcarea C**, Fukumasu H, Fierro-Vásquez N, Lavin P. (2023) Apoptotic induction in human cancer cell lines by antimicrobial compounds from Antarctic *Streptomyces fildesensis* (INACH3013). *Fermentation*. 9(2), 129; <https://doi.org/10.3390/fermentation9020129>
17. Bătrînescu-Moteau Costin, Lucaci Anca Ioana, Neagu Simona, Cojoc Roxana, **Purcarea Cristina**, Podosu (Vlad) Aurelia, Enache Mădălin, Ruginescu Robert, 2023, Superoxide dismutase activity în microorganisms inhabiting volcanic tuff rock. *Oltenia. Studii și Comunicări, Seria Științele Naturii*, Tom 39, 1, 201-209.
18. Bătrînescu-Moteau Costin, Simona Neagu, Oana Cătălina Mocioiu, Anca Ioana Lucaci, Roxana Cojoc, **Cristina Purcarea**, Aurelia Podosu (Vlad), Maria Zaharescu, Mădălin Enache, Robert Ruginescu, 2023, Evidence of microbial antagonism in volcanic tuff rock. *Romanian Journal of Biology, Plant Biology*, 68, 1-2, 9 – 20.
19. Bătrînescu-Moteau Costin, Neagu Simona, Lucaci Anca-Ioana, Ruginescu Robert, Maria Gabriel, Cojoc Roxana, **Purcarea Cristina**, Podosu Aurelia, Enache Mădălin, 2022, Preliminary data concerning communities of microorganisms în a volcanic tuff endolytic habitat. *Oltenia. Studii și Comunicări. Științele Naturii*. Tom. 38, No. 1, 168 – 173.
20. Bătrînescu-Moteau Costin, Neagu Simona, Lucaci Anca-Ioana, Ruginescu Robert, Cojoc Roxana, Podosu (Vlad) Aurelia, **Purcarea Cristina**, Negru Mircea, Enache Mădălin, 2022, New data on microorganisms isolated from ceramic materials of the Romula archaeological site, România. *Oltenia. Studii și Comunicări. Științele Naturii*. Tom. 38, No. 2, 147 – 153.
21. Ruginescu R, Lavin P, Iancu L, Menabit S, **Purcarea C** (2022) Bioprospecting for novel bacterial sources of hydrolytic enzymes in the Black Sea. *Microorganisms*. 10, 2468. <https://doi.org/10.3390/microorganisms10122468>
22. Paun VI, Banciu RM, Lavin P, Vasilescu A, Fanjul-Bolado P, **Purcarea C.** (2022) Antarctic aldehyde dehydrogenase from *Flavobacterium* PL002 as potent catalyst for acetaldehyde determination in wine. *Scientific Reports*. 12(1):17301.doi: 10.1038/s41598-022-22289-8
23. Menabit S, Begun T, Teacă A, Mureșan M, Lavin P, **Purcarea, C** (2022) DNA Barcoding and Distribution of Gastropods and Malacostracans in the Lower Danube Region. *Diversity*, 14, 533. <https://doi.org/10.3390/d14070533>
24. Osés-Pedraza R, Lavin P, Bonnail E, **Purcarea C**, Alarcon M, Irribarren-Riquelme D, Rodríguez J. (2022) Fenton-mediated chlorophenol degradation by iron reducing compounds isolated from endophytic fungi in Atacama Puna Plateau *Lecanicillium* ATA01. *Fermentation*, 8(4), 147 <https://doi.org/10.3390/fermentation8040147>
25. Mondini A, Anwar MH, Ellegaard-Jensen L, Lavin P, Jacobsen CS, **Purcarea C** (2022) Heat shock response of the active microbiome from perennial cave ice. *Front. Microbiol.* 12:809076 Doi: 10.3389/fmicb.2021.809076
26. Lulea AC, Ruginescu R, Banciu RM, Pantazi C, Brinduse E, Ion M, Quintela S, Elejalde E, Fernández de Castro L, Villarín MR, Ruiz-de-Vergara Z, Ruíz C, Epure P, **Purcarea C**, Alina Vasilescu (2022) Fast electrochemical measurement of laccase activity for monitoring grapes' infection with *Botrytis cinerea*. *Processes*. 10(3) 575 <https://doi.org/10.3390/pr10030575>
27. Necula-Petrareanu G, Lavin P, Paun VI, Gheorghita GI, Vasilescu A, **Purcarea C** (2022) Highly stable cold-active aldehyde dehydrogenase from the marine Antarctic *Flavobacterium* sp. PL002. *Fermentation*. 8(1):7-24 <https://doi.org/10.3390/fermentation8010007>
28. Menabit S, Iancu L, Pavel AB, Popa A, Lupascu N, **Purcarea C** (2022) Molecular identification and distribution of insect larvae in the Lower Sector of the Danube River. *Oceanological and Hydrobiological Studies*, 51(1) doi:10.2478/oandhs-2021-0000
29. Gheorghita GI, Paun VI, Neagu S, Maria GM, Enache M, **Purcarea C**, Parvulescu VI, Tudorache M (2021) Cold-active lipase-based biocatalysts for silymarin valorization through biocatalytic acylation of silybin. *Catalysts*, 11(11):1390. <https://doi.org/10.3390/catal11111390>
30. Iancu L, Angelescu IR, Paun VI, Henriquez-Castillo C, Lavin P, **Purcarea C** (2021) Microbiome pattern of *Lucilia sericata* (Meigen) (Diptera: Calliphoridae) and feeding substrate in the presence of the foodborne pathogen *Salmonella enterica*. *Sci Rep* 11, 15296. <https://doi.org/10.1038/s41598-021-94761-w>
31. Bucur B, **Purcarea C**, Andreescu S, Vasilescu A (2021) Addressing the selectivity of enzyme biosensors - solutions and perspectives. *Sensors*. 21(9), 3038; <https://doi.org/10.3390/s21093038>
32. Teoh CP, Lavín P, Najimudin N, Lee PC, Iancu L, **Purcarea C**, Wong CMWL (2021) Draft Genome Sequence of *Flavobacterium* sp. strain PL002 isolated from an Antarctic Porphyra algae. *Microbiol. Resour. Announc.* 10 (8) e00063-21; DOI: 10.1128/MRA.00063-21
33. Lavin P, Henríquez-Castillo C, Yong ST, Valenzuela-Heredia D, Osés R, Frez K, Borba M, **Purcarea C**, Wong CMWL (2021) Draft Genome Sequence of Antarctic psychrotroph *Streptomyces fildesensis* sp. strain INACH3013 isolated from King George Island soil. *Microbiol. Resour. Announc.* 10 (5) e01453-20 DOI: 10.1128/MRA.01453-20
34. Fanjul-Bolado P, Fogel R, Limson J, **Purcarea C**, Vasilescu A (2021) Advances in the Detection of Dithiocarbamate Fungicides: Opportunities for Biosensors. *Biosensors*. 11(1):12. <https://doi.org/10.3390/bios11010012>
35. Paun VI, Lavin P, Chifiriuc MC, **Purcarea C** (2021) First report on antibiotic resistance and antimicrobial activity of bacterial isolates from 13,000-year old cave ice core. *Sci Rep* . 11, 514. <https://doi.org/10.1038/s41598-020-79754-5>

36. Titoiu AM, Necula-Petrareanu G, Visinescu D, Dinca V, Bonciu A, Mihailescu CN, **Purcarea C**, Boukherroub R, Szunerits S, Vasilescu A (2020) Flow injection enzymatic biosensor for aldehydes based on a Meldola Blue-Ni complex electrochemical mediator. *Microchim Acta* 187, 550. <https://doi.org/10.1007/s00604-020-04477-3>
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38. Ruginescu R, **Purcarea C**, Dorador C, Lavin P, Cojoc R, Neagu S, Lucaci AI, Enache M (2019) Exploring the hydrolytic potential of cultured halophilic bacteria isolated from the Atacama Desert. *FEMS Microbiology Letters*. 366(17): fnz224, <https://doi.org/10.1093/femsle/fnz224>
39. Paun VI, Icaza G, Lavin P, Marin C, Tudorache A, Perşoiu A, Dorador C, **Purcarea C** (2019) Total and Potentially Active Bacterial Communities Entrapped in a Late Glacial Through Holocene Ice Core From Scarisoara Ice Cave, Romania. *Front Microbiol* 10:1193. <https://doi.org/10.3389/fmicb.2019.01193>
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42. Mondini A, Paun V, Necula-Petrareanu G, Iancu L, **Purcarea C** (2019) Cold adaptation mechanisms of aspartate transcarbamoylase from *Glaciobacter superstes*, an Arctic psychrophilic bacterium. *Romanian Journal of Biology*. 64(1-2): 19-30.
43. Iltus C, Pascu MD, Persoiu A, Iancu L, Lavin P, **Purcarea C**. (2018) Bacterial and archaeal community structures in perennial cave ice. *Scientific Reports*. 8:15671. DOI:10.1038/s41598-018-34106-2.
44. Iancu L, Junkins EN, Necula-Petrareanu G, **Purcarea C** (2018) Characterizing forensically important insect and microbial community colonization patterns in buried remains. *Scientific Reports*, 8: 15513. doi: 10.1038/s41598-018-33794-0
45. Titoiu AM, Lapauw M, Necula-Petrareanu G, **Purcarea C**, Fanjul-Bolado P, Marty JL, Vasilescu A. (2018) Carbon nanofiber and Meldola Blue based electrochemical sensor for NADH: application to the detection of benzaldehyde. *Electroanalysis*. 30: 2676-2688. <https://doi.org/10.1002/elan.201800472>
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Patent

1. Vasilescu A, Titoiu AM, Purcarea C, Necula-Petrareanu G. Metoda de determinare a fungicidului tiram bazata pe inhibitie enzimatica si senzor electrochimic. OSIM. Buletin oficial de proprietate industriala – Inventii. Nr 2/2020 - 28.02.2020.A 2018 00587
2. Purcarea C, Paun VI, Ojovan BA, Sandulescu-Tudorache M, Ion S. Metoda de obtinere a lipazei bacteriene PSL-2 din tulpina bacteriana Psychrobacter SC65A3 izolata din gheata de peșteră din Ghețarul Scărișoara. OSIM – A/00652/19.10.2022
3. Ruginescu Robert Marian, Vasilescu Alina Mihaela, Cristina Purcarea. Metodă optimizată de izolare a membranelor tilacoide din microalga Coccomyxa subellipsoidea LT4. Aplicație patent OSIM Nr. A/00671, 09.11.2023
4. Vasilescu Alina Mihaela, Banciu Roberta Maria, Necula-Petrareanu Georgiana, Ftodiev Andreea, Purcarea Cristina. Metodă de determinare selectiva a tiramului bazata pe cuplarea intre o reactie de inhibitie enzimatica si spectroscopie Raman amplificata de suprafata, OSIM, No: A 100376 from 14.07.2023

5. Vasilescu Alina Mihaela, Banciu Roberta Maria, Necula-Petrareanu Georgiana, Ftodiev Andreea Iuliana, Purcarea Cristina, Dinca Valentina. Straturi catalitice obținute din cerneluri pe bază de aldehyd dehidrogenază pentru aplicații biosenzoristice. OSIM A/00504 /14.09.2023
6. Vasilescu Alina Mihaela, Ftodiev Andreea Iuliana, Banciu Roberta Maria, Ruginescu Robert, Purcarea Cristina. Metodă de detecție în ape a poluanților inhibitori ai fotosintezei bazată pe biosenzor electrochimic cu tilacoide din *Coccomyxa subelipsoidea* LT4. OSIM A/00780, 04.12.2023

INVITED SPEAKER

- (1) Rhodes University, Grahamstown, South Africa (2023), (2) Wayne State University School of Medicine, USA (2011); (3) Vrije University Brussels, Belgium (2002); (4) Rutgers University, USA (2001); (5) Summer School „Macro, micro and nano biological complexity”, Institute of Biology Bucharest (2009); (6) Summer School „Adaptation to stress” Institute of Biology Bucharest (2007)

CONFERENCES

1. **Smart Diaspora - Workshop Exploratoriu “Frontiere interdisciplinare ale cunoașterii: medii extreme de la trecut la viitor”** Cluj-Napoca, 4-7 noiembrie 2025. Corina Ițcuș, Victoria I. Paun, Antonio Mondini, Muhammad Z. Anwar, Aurel Persoiu, Carsten S. Jacobsen, Cristina Purcarea1 Warming Ice: Climate-driven shifts in microbial communities of frozen ecosystems (oral presentation)
2. **1st Ibero-American Congress on Algal Biotechnology (CIBAL 2025)**, Antofagasta, Chile, 25-28 august 2025. Paris Lavin, Cristina Purcarea, Estefany Salgado, Natalia Fierro, Tania Garcia, Mario Gonzalez, Allan Prieto, Benjamin Flores. Genomic characterization of Euryhalinema sp., a cyanobacterium isolated from a mesohaline and alkaline environment in the sub-Antarctic Magallanes region (Poster)
3. **SCAR Open Science Conference 2024 “Antarctic Science: Crossroads for a New Hope”**, Pucón, Chile, 19-23 August 2024. Necula-Petrareanu G, Paun VI, Sanda C, Banciu RM, Ftodiev A, Vasilescu A., Lavin P, Purcarea C, Cold-adapted aldehyde dehydrogenases from Antarctic bacteria for enhanced applications in biotechnologies and biosensing (Poster)
4. **International Conference “Recent concerns in the research, conservation, and valorization of cultural heritage”** (Preocupări recente în cercetarea, conservarea și valorificarea patrimoniului cultural), Targu Mures, 12-14 June 2024. Corina Ițcuș, Constantin Marin, Ioana Victoria Păun, Cristian Coman, Iris M. Tușa, Manuela E. Sidoroff, Cristina Purcarea, *Impactul schimbărilor climatice asupra microbiomului Antarctic*. Oral Presentation
5. **International Conference “FRONTIERS UNBOUND: Exploring Extreme Environments”**, Cluj-Napoca, 12-13 septembrie 2024. (1) Necula-Petrareanu G, Lavin P, Vasilescu A, Purcarea C. *Efficient cold-active extremozyme for aldehydes monitoring*; (2) Paun IV, Ițcuș C, Chifiriuc C, Lavin P, Purcarea C. *Cave ice microbiome – reservoir for new biomolecules in medicine and biotechnologies*. (3) Ițcuș C, Marin C, Hong S-G, Sidoroff ME, Coman C, Purcarea C. *Glacier melting modelling distribution of bacterial community structure*. Oral Presentations
6. **Karst Science Day Symposium**, Bucharest, 31 March 2023. Ruginescu R, Vasilescu A, Banciu R, Purcarea C. Cold-adapted phototrophic microorganisms from Scarisoara Ice Cave: Suitable models for developing electrochemical biosensors for herbicides. Oral presentation
7. **13th International Congress on Extremophiles**, Loutraki, Greece, 18-22 September 2022. (1) Ion S, Paun VI, Gheorghita GR, Ftodiev A, Neagu S, Tudorache M, **Purcarea C**. Psychrophilic bacterial lipase for improved biocatalytic acylation process in oil industry. Poster. (2) Ruginescu R, Iancu L, Vasilescu A, **Purcarea C**. Diversity and hydrolytic potential of marine bacteria from the Black Sea Poster.
8. **10th SCAR Open Science Conference (SCAR2022)**. Online, August 1-10, 2022. Paun VI, Mondini A, Anwar Z, Lavin P, Ellegaard-Jensen L, Jacobsen CS, Purcarea C. Ice microbiome response to thermal stress. Oral presentation
9. **28th INTERNATIONAL KARSTOLOGICAL SCHOOL CLASSICAL KARST “Regional Karstology – Local and General Aspects within International Year of Karst and Caves”**. Slovenia (online) June 14-18, 2021. (1) Ojovan B, Gheorghita GR, Paun VI, **Purcarea C**. Cold active lipases from Scarisoara Ice Cave and their applicative potential. Poster; (2) Paun VI, Lavin P, Chifiriuc C, **Purcarea C**. Ancient antimicrobial resistance in Scarisoara ice cave. Poster
10. **SCAR 2020 Online Open Science Conference**, 3-7 august 2020. Mondini A, Anwar MZ, Ellegaard-Jensen L, Lavin P, Jacobsen CS, **Purcarea C**. Temperature response of active microbiome from perennial cave ice. Oral Presentation
11. **12th International Conference on Halophilic Microorganisms**, Cluj-Napoca, Romania, 24-28 June, 2019. Ruginescu R, **Purcarea C**, Dorador C, Lavin P, Cojoc R, Neagu S, Gomoiu I, Enache M. Halophilic Microorganisms producing extracellular hydrolytic enzymes isolated from Atacama Desert. Poster.
12. **8th International Conference on Polar & Alpine Microbiology**, Hamilton, New Zealand, 1-13 February 2019. (1) Paun VI, Ițcuș C, Lavin P, Icaza G, Mondini A, Donhauser J, Frey B, Marin C, Tudorache A, Persoiu A, Dorador C, **Purcarea C**. Total and active microbiome from perennial cave ice Oral Presentation; (2) Mondini A, Anwar MZ, Jacobsen CS, Larose C, Purcarea C. Effect of environmental heat-shock stress on glacier microbiome. Oral Presentation
13. **XXIV Latinoamerican Congress of Microbiology**, Santiago de Chile, Chile, 13-16 November 2018 (1) *Microbiome from Late Glacial perennial ice of Scarisoara ice cave*. Paun VI, Ițcuș C, Marin C, Persoiu A, Lavin P, Brad T, Icaza G, Dorador C, Mondini A, Donhauser J, Frey B, **Purcarea C**. Oral Presentation.; (2) *Microbial diversity of Grey Glaciar system (Patagonia, Chile): high biotechnological potential regarding antimicrobial and nanoparticles synthesis*. Lavin P, Aran SP, Icaza G, Munoz P, Severino E, Garcia J, Molina V, Ițcuș C, Paun I, Chifiriuc C, Purcarea C, Dorador C. Poster.
14. **10th International Zoological Congress of "Grigore Antipa" Museum**, Academia Română, București, 21-24 November 2018. *New record of Conicera similis haliday (Diptera: Phoridae) in Romania and microbiome characterization*. Iancu L, Junkins E., Purcarea C. Poster.
15. **International Symposium on Cryosphere and Biosphere 2018**, Kyoto, Japan, 14-19 March 2018 (1) Cave ice microbiome. Purcarea C, Ițcuș C, Paun VI, Marin C, Persoiu A, Hillebrand-Voiculescu A, Brad T, Badaluta C, Lavin P

- Oral Presentation); (2) Thermal response of pyrimidine nucleotide genes expression in the psychrophilic bacterium *Glaciobacter superstes*. Mondini A, Purcarea C Oral Presentation.
16. **International Workshop on Ice Caves IWIC-8**, Potes, Spain, 9-18 June 2018. Searching for microbial biomarkers for past climate changes in Scarisoara Ice Cave Purcarea C, Itcus C, Paun VI, Marin C, Persoiu A, Brad T, Badaluta C, Icaza G, Dorador C, Lavin P, Donhauser J, Frey B. Oral Presentation.
 17. **POLAR2018 "Where the Poles come together" SCAR/IASC Open Science Conference**, Davos, Switzerland, 19-23 June 2018. (1) Ice microbiome: from Antarctic glaciers to Alpine ice caves. Purcarea C, Itcus C, Marin C, Hong SG, Paun VI, Persoiu A, Brad T, Paris L, Hillebrand-Voiculescu A, Pascu D, Coman C, Tusa I, Sidoroff ME. Oral Presentation; (2) Bacterial community structure in glacier ice and subglacial streams from King George Island, Antarctica. Itcus C, Marin C, Hong SG, Lavin P, Coman C, Tusa I, Sidoroff ME, Purcarea C. Poster; (3) Chronosequence of active bacterial community from an alpine ice cave. Paun VI, Itcus C, Marin C, Persoiu A, Lavin P, Hillebrand-Voiculescu A, Mondini A, Badaluta C, Dorador C, Purcarea C. Poster; (4) Mondini A, Muhammad ZA, Jacobsen CS, Larose C, Purcarea C. Heat shock response of glacier microbiome. Poster.
 18. **European Biotechnology Congress**, Athens, Greece, 26-28 April, 2018. Antarctic Flavobacterium aldehyde dehydrogenase – a cold-adapted catalyst for biosensing. Georgiana Necula-Petrareanu, P. Lavin, A. Vasilescu, M. Lapauw, C. Purcarea Oral Presentation.
 19. **International Forensics Symposium**, Bucharest, Romania, 24 April, 2018. (1) Iancu L, Necula-Petrareanu G, Purcarea C. Application of microorganisms in decomposition monitoring during cold season (oral presentation); (2) Iancu L, Purcarea C. Entomology as evidence in forensic investigations. Oral Presentation.
 20. **American Academy of Forensic Sciences 70th Annual Scientific Meeting**, Seattle, WA, USA. 19-24 February 2018. Iancu L, Necula-Petrareanu G, Junkins E, Purcarea C. Insects and Bacteria as Forensic Decomposition Markers of Buried Rat Carcasses Oral Presentation.
 21. **International Conference "Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences"**, Brasov, Romania, 24 May, 2018. (1) Stable NADH detection with carbon nanofibers and Meldola Blue-modified electrodes. Vasilescu A, Titoiu AM, Visinescu DB, Necula-Petrareanu G, Purcarea C. Oral Presentation. (2) Molecular Adaptations to Low Temperatures of Cold-Active Microbial Catalysts. Necula-Petrareanu G, Mondini A, Lavin P, Vasilescu A, Purcarea C. Poster.
 22. **International workshop « Biosensors as tools for today's challenges »**, Bucharest, Romania, 23 July 2018. Cold-active enzyme for biosensing and biotechnology. G. Necula-Petrareanu, P. Lavin, A. Vasilescu, C. Purcarea C. Oral Presentation.
 23. **Biospeleology and Theoretical and Applied Karstology Symposium**. Baile Herculane, Romania, 27-30 September, 2018. Paun VI, Icaza G, Lavin P, Persoiu A, Iancu L, Marin C, Badaluta C, Mondini A, Hillebrand-Voiculescu A, Haidau C, Dorador C, Purcarea C. Bacterial diversity in 13,000 years old ice from Scărișoara ice cave Oral Presentation.
 24. **7th International Conference on Polar & Alpine Microbiology**, Nuuk, Greenland, 8-12 September 2017. (1) Reconstruction of Scarisoara ice cave microbiome based on 16S rRNA gene sequencing and shotgun metagenomics. Itcus C, Pascu D, Paun VI, Persoiu A, Hillebrand-Voiculescu A, Brad T, Purcarea C. Poster; (2) Microbial diversity of glacier ice and subglacial streams from King George Island. Itcus C, Marin C, Hong SG, Lavin P, Coman C, Tusa I, Sidoroff ME, Purcarea C. Poster; (3) Cold-active enzymes from the psychrophilic bacterium *Glaciobacter superstes* involved in pyrimidine nucleotide biosynthesis. Mondini A, Purcarea C. Poster.
 25. **XXIIth SCAR Biology Symposium**, Leuven, Belgium, July 10-14, 2017. Environment dependent distribution of glacier and subglacial microbial communities from King George Island (NW Antarctica). Itcus C, Hong SG, Marin C, Coman C, Tusa I, Sidoroff ME, Purcarea C. Oral Presentation.
 26. **14th Meeting of the European Association for Forensic Entomology**, Treviso, Italy, June 6-12, 2017. Colonization pattern of Diptera and Coleoptera on buried remains in an urban area (Bucharest, Romania). Iancu L, Purcarea C. Oral Presentation.
 27. **XXXIV SCAR Meetings and Open Science Conference**, Kuala Lumpur, Malaysia, August 19-31, 2016. Spatial Diversity of Glacier Ice Bacteria from King George Island (NW Antarctica). Itcus C, Coman C, Marin C, Nielsen TK, Hansen L, Tusa IM, Sidoroff ME, Purcarea C. Poster.
 28. **IUBMB Symposium on Modern Biotechnologies in Sustainable Development of the Danube Delta**, Murighiol, Romania, May 30-June 2, 2016 (1) Bacterial diversity in glaciers from King George Island, Antarctica. Itcus C, Marin C, Coman C, Tusa IM, Sidoroff ME, Purcare C. Poster; (2) 16S rDNA pyrosequencing of microbial communities from sulphurous hydrothermal sources of Baile Herculane, Romania. Itcus C, Pascu D, Bancila RI, Staras A, Marin C, Purcarea C. Poster.
 29. **7th International Workshop on Ice Caves (IWIC-VII)**, Postojna, Slovenia, May 16-22, 2016. (1) Cultured bacterial diversity in Scarisoara ice cave. Itcus C, Pascu D, Hillebrand-Voiculescu A, Persoiu A, Brad T, Purcarea C. Poster; (2) Distribution of bacteria and archaea in the ice block of Scarisoara cave (Romania). Itcus C, Pascu D, Hillebrand-Voiculescu A, Brad T, Persoiu A, Onac BP, Purcarea C. Poster.
 30. **6th International Conference of Polar and Alpine Microbiology**, Ceske Budejovice, Czech Republic, September 6-10, 2015. (1) Prokaryotic community structure across the ice block of Scarisoara cave determined by 454 pyrosequencing. Itcus C, Pascu D, Hillebrand-Voiculescu A, Brad T, Persoiu A, Onac BP, Purcarea C. Poster; (2) Diversity of phototrophic bacteria in Scarisoara Ice Cave. Itcus C, Pascu D, Hillebrand-Voiculescu A, Brad T, Persoiu A, Onac BP, Purcarea C.

- Poster; (3) Diversity of phototrophic bacteria in Scarisoara ice cave. Pascu D., Itcus C., Ardelean I., Cirnu M., Hillebrand-Voiculescu A., Brad T., Persoiu A., Purcarea C. Poster.
31. **10th International Congress on Extremophiles**, Sankt Petersburg, Russia, September 6-11, 2014. *Diversity of cultured and uncultured ice cave microbiota*, Itcus C, Pascu D, Hillebrand-Voiculescu A, Brad T, Persoiu A, Ardelean I, Purcarea C. Oral presentation
 32. **International Workshop "Life in the cold"**, Leeds, UK, Nov. 28, 2013. (1) *Cultured and uncultured microorganisms from perrenial cave ice*. Itcus C, Hillebrand A, Pascu D, Perşoiu A, Brad T, Purcarea C. Poster; (2) *Phototrophs in ice cave and supraglacial summer pond*. Pascu D, Ardelean I, Itcus C, Hillebrand A, Perşoiu A, Brad T, Purcarea C. Poster.
 33. **5th International Conference of Polar and Alpine Microbiology**, Big Sky, MT, USA, September 8-12, 2013. *Diversity of ice embedded microorganisms from Scarisoara Cave, Romania*. Itcus C, Hillebrand-Voiculescu A, Pascu D, Persoiu A, Brad T, Onac BP, **Purcarea C.** Oral presentation
 34. **A New Approach of the Academic Research in Biology**, IBB Annual Conference, Bucharest, December 11-12, 2012. (1) *Microbial Diversity in the Subterranean Ice Deposits of Scărișoara Cave*. A. Hillebrand-Voiculescu. Oral presentation; (2) *Cell growth and DGGE analysis of microorganisms from Scarisoara Cave ice sediments*. C. Itcus, A. Hillebrand-Voiculescu, D. Pascu, A. Persoiu, T. Brad, C. Purcarea. Poster.
 35. **16th International Congress of Speleology**, Brno, Czech Republic, July 21 - 28, 2013. (1) *Unravelling underground ice microcosms*. Hillebrand-Voiculescu, C. Itcus, A. Rusu, E. Popa, D. Pascu, I. Ardelean, A. Persoiu, T. Brad, B.P. Onac, C. Purcarea. Oral presentation. (2) *Molecular analysis of microorganisms diversity from perrenial underground ice sediments*. C. Itcus, A. Hillebrand-Voiculescu, D. Pascu, I. Ardelean, A. Persoiu, T. Brad, C. Purcarea. Poster.
 36. **5th International Workshop on Ice Caves (IWIC-V)**, Barzio, Italia, 16 – 23.09.2012. *Microbial biodiversity in ice sediments from Scarisoara Ice Cave (Romania)*. A. Hillebrand-Voiculescu, C. Itcus, I. Ardelean, A. Rusu, A. Persoiu, T. Brad, E. Popa, B.P. Onac, C. **Purcarea**. Poster.
 37. **European Biotechnoloy Congress 2011**, Istanbul, Turcia, 28.09-1.10.2011. *Methanobrevibacter smithii* carbamoyl phosphate synthetase, a missing link and a putative target for obesity prevention. E. Popa, A. Rusu, C. **Purcarea**. Poster.
 38. **BAGECO 2011 Microbial Genetics and Ecology Conference**, Corfu, Grecia, 29.05-2.06.2011. *Carbamoyl phosphate synthetase from Methanobrevibacter smithii*, a missing link and a methanogen specific ammonia-metabolizing enzyme. E. Popa, A. Rusu, C. Purcarea. Poster. *Pyrimidine biosynthesis regulation in hyperthermophilic Aquifex aeolicus by an ancient signal transduction pathway*. Purcarea C, R. Fernando, Guy-Evans H, Evans DR. Poster.
 39. **FEMS 2009 3rd Congress of European Microbiologists**, Gothenburg - Suedia, 28 iunie – 2 iulie 2009. *Carbamoyl phosphate synthetase from the human gut archaeon Methanobrevibacter smithii*, a putative target for obesity prevention. E. Popa, A. Rusu, C. Purcarea. Poster.
 40. **XI Anniversary Scientific Conference "Biology-Traditions and Challenges"**, Sofia – Bulgaria, 27-29 mai, 2009. *An ammonium metabolizing enzyme from the human archaeon Methanobrevibacter smithii might represent a missing link in the evolution of carbamoyl phosphate synthetases* E. Popa, A. Rusu, C. **Purcarea**. Poster.
 41. **International Exploratory Workshop "Entremophilic microorganisms: molecular adaptations and bionanotechnological applications"**, Bucuresti, 18-19 septembrie 2008. *Carbamoyl phosphate synthesis in hyperthermophiles*. C. **Purcarea**. Oral presentation
 42. **SNBC XXVI Annual Meeting**, Cluj-Napoca, 12-15 Iunie, 2008. *Extremozime microbiene cu aplicatii medicale*. C. Purcarea, S. Sadecki, DR Evans, HI Guy. Oral presentation; *Arginin dezaminaza din archaeonul termoacidofil Picrophilus torridus: un potential agent terapeutic antitumoral cu stabilitate ridicata*. E. Popa, L. Dumitru, C. Purcarea. Poster.
 43. **2nd International Symposium of Polar Scientific Research**, Bucuresti – Romania, 16-17 Noiembrie 2007. *Temperature adapted microbial enzymes*. C. Purcarea. Oral presentation.
 44. **Conferinta Internationala de Chimie-Fizica „ROMPHYSICHEM-12"**, Bucuresti – Romania, 6-8 Septembrie 2006. (1) *On the entropy of fast and slow refolding*. C. **Purcarea**, C. Pantazica . V.E. Sahini. Oral presentation. (2) *Correlation of bacterial growth kinetics with protein refolding from culture medium* G. Rusu, C. **Purcarea**, C. Pantazica, V.E. Sahini. Oral presentation.
 45. **20th International Conference on Arginine and Pyrimidines**, Lund, Sweden, 17-20 August 2006. *A eukaryotic-like protein kinase and its cognate phosphatase regulates carbamoyl phosphate synthetase in the ancient hyperthermophile, Aquifex aeolicus*. Cristina Purcarea, Hedeel Guy-Evans, and David R. Evans. Oral presentation H. Guy-Evans.
 46. **Aspartate Transcarbamylase International Workshop**. Brussels, Belgium. June 11-12, 2004. *Posttranslational modifications of Aquifex aeolicus carbamoyl phosphate synthetase; phosphorylation by endogenous Ser/Thr protein kinase*. C. **Purcarea**, H.I. Guy, D.R. Evans. Poster.
 47. **Aspartate Transcarbamylase International Workshop**. Boston, MA, U.S.A. June 9-10, 2003. *Reconstitution of eukaryotic CAD from bacterial enzymes*. . C. **Purcarea**, D. Ebert, H.I. Guy, D.R. Evans Oral presentation.
 48. **Guest speaker** Rutgers University, Cook College, Dept. of Biochemistry & Microbiology, New Brunswick, NJ, USA. March 9, 2001.
 49. **International Congress "Extremophiles 2000"**, Hamburg, Germany. September 3-7, 2000. *Aspartate Transcarbamylase from the Hyperthermophilic Eubacterium Aquifex aeolicus*. C. **Purcarea**, B. Fan, M. Liu, D. R. Evans. Poster.
 50. **International Symposium on Aspartate Transcarbamylase**, Detroit, MI, U.S.A. July 13-14, 2000. *Hybrid formation of a C-class aspartate transcarbamylase*. C. **Purcarea**, A. Ahuja, H.I. Guy, D.R. Evans. Oral presentation.

51. **International Symposium on Aspartate Transcarbamylase**, Brussels, Belgium, June 7-8, 1999. Evolution of allosteric regulation in aspartate transcarbamylases. C. Purcarea, H.I. Guy, D.R. Evans. *Oral presentation*.
52. **ASBMB '99 Meeting**, San Francisco, CA, U.S.A. May 16-20, 1999. (1) *Pyrococcus abyssi* carbamate-kinase-like carbamoyl phosphate synthetase; C. Purcarea, G. Herve, R. Cunin, D. R. Evans. *Poster*; (2) Unusual pyrimidine biosynthetic enzymes from an early divergent hyperthermophilic eubacterium; C. Purcarea, B. Fan, M. Liu, J. F. Vickrey, D. R. Evans. *Poster*.
53. **Purine and Pyrimidine Metabolism in Man International Conference**, Gmunden, Autriche, June 1-7, 1997. Synthesis and utilization of carbamoyl phosphate in the pyrimidine biosynthesis in *Pyrococcus abyssi*. C. Purcarea, G. Herve, R. Cunin. *Poster*.
54. **Thermophiles '96 International Conference on the Biology, Ecology, and Biotechnology of Thermophilic Microorganisms**, Athens, GA, U.S.A. September 4-9, 1996. (1) Carbamylphosphate synthetase from *Pyrococcus abyssi*: kinetic properties and channeling of carbamylphosphate towards the arginine and pyrimidine biosynthetic pathway; C. Purcarea, V. Simon, D. Prieur, G. Herve; *Poster* (2) Cloning and expression in *Escherichia coli* of the aspartate transcarbamylase from a hyperthermophilic and barophilic archaeobacterium, *Pyrococcus abyssi*; C. Purcarea, G. Herve, M. Ladjimi and R. Cunin. *Poster*.
55. **ASBMB '96 Meeting**, New Orleans, LA, U.S.A. June 2-6, 1996. Cloning and expression of the aspartate transcarbamylase gene of the deep-sea hypertherophilic archaeobacterium *Pyrococcus abyssi* in *Escherichia coli*; C. Purcarea, G. Herve, R. Cunin. *Poster*.
56. **International Symposium on Aspartate Transcarbamylase**, College Station, TX, U.S.A. May 30-31, 1996. Aspartate transcarbamylase from *Pyrococcus abyssi*. C. Purcarea, G. Herve, R. Cunin. *Oral presentation*.
57. **French Conference of the 'Bactocéan' Research Group**, "Molecular Biology of Thermophiles", Gif-sur Yvette, France, February 5-7, 1996. Structure and expression of *Pyrococcus abyssi* aspartate transcarbamylase in *Escherichia coli*. C. Purcarea, V. Simon, D. Prieur, G. Herve. *Oral presentation*.
58. **'Dorsales' French Conference**, "Adaptations to hydrothermal environmental constraints", Banyuls-sur-Mer, December 12-15, 1995. (1) Structural and functional properties of the *Pyrococcus abyssi* aspartate transcarbamylase. C. Purcarea, V. Simon, G. Herve. *Oral presentation*; (2) *Pyrococcus abyssi* carbamylphosphate synthetase: kinetic properties and carbamylphosphate channelling to both arginine and pyrimidines pathways; C. Purcarea, V. Simon, G. Herve. *Poster*.
59. **16th International Congress of Biochemistry and Molecular Biology**, New Delhi, India. September 19-22, 1994. Enzymes implicated in the synthesis and utilization of carbamylphosphate from *Pyrococcus abyssi*. C. Purcarea, G. Herve. *Poster*.
60. **14th International Arginine Workshop**, Paris, France, September 12-14, 1994. (1) Enzymatic equipment implicated in the biosynthesis and utilization of carbamylphosphate in *Pyrococcus abyssi*, C. Purcarea, G. Herve. *Oral presentation*; (2) Carbamylphosphate synthetase from *Pyrococcus abyssi*, a deep-sea hyperthermophilic archaeobacterium; C. Purcarea, G. Herve. *Poster*.
61. **94th General Meeting of the American Society for Microbiology**. Las Vegas, NV, U.S.A. May 23-27, 1994. Carbamylphosphate synthetase from a new hyperthermophilic archaeobacterium, *Pyrococcus abyssi*; C. Purcarea, G. Herve. *Poster*.
62. **The Genes and Enzymes of Pyrimidine Biosynthesis Sixth Harden Satellite Meeting**, Glasgow, U.K. September 12-14, 1992. Characterization of aspartate transcarbamylase of a hyperthermophilic archaeobacterium coming from a deep-sea hydrothermal vent. C. Purcarea, G. Erauso, M. Ladjimi, D. Prieur, G. Herve. *Poster*.
63. **Thermophiles: Science and Technology International Conference**, Reykjavik, Islande, August 23-26, 1992. Characterization of aspartate transcarbamylase of a hyperthermophilic archaeobacterium coming from a deep-sea hydrothermal vent. C. Purcarea, G. Erauso, M. Ladjimi, D. Prieur, G. Herve. *Poster*.

RESEARCH GRANTS

- 2026-2030 *National Multidisciplinary Research Centre of Excellence for Drug-Resistant Infections* (ARES) PN-IV-P6-6.1-CoEx-2024-0196, Project 17/CoEx/2026, Key person
- 2021-2023 *Portable biosensor coupled with a sampling drone for the in situ assessment of seawater toxicity* MOBILTOX (ERANET-MARTERA-MOBILTOX-2, contract 224/04.01.2021, Partner PI) **100,000 Euro**
- 2020-2022 *Silymarin content enrichment for vegetal waste valorization in cold-pressed milk thistle oil technology* SYMPLUS (PN-III-P2-2.1-PED-2019-2461, PI) **68,750 Euro**
- 2020-2022 *Selective extremozyme-based platform for aldehydes detection in air in a wide temperature range* ALDSENS (PN-III-P2-2.1-PED2019-2746, Partner PI) **35,417 Euro**
- 2020-2023 *Innovative enzymatic coatings for electrochemical interfaces*. M-ERANET-ENZ4IFACES. Contract 158/2020. **92,257 Euro** (Partner PI)
- 2016-2020 *Microorganisms in Warming Arctic Environments*. Grant H2020-MSCA-ITN-2015. ETN 675546. **215,069 Euro** (Partner PI)
- 2016-2018 *Cave ice microbiom: metabolic diversity and activity in response to climate dynamics and anthropogenic pollution*. Grant ELAC2014/DCC-0178. **702,999 Euro** (PI)
- 2017-2018 *Novel aldehyde dehydrogenase from Antarctic bacterium as highly efficient catalyst for low temperature biosensing and biotechnologies*. Grant PN-III-CERC-CO-PED-2016 (ANCS, UEFISCDI). **134,835 Euro** (PI)
- 2012-2016 *Biodiversity and chronological distribution of microorganisms in perennial ice deposits from Scarisoara Ice Cave (Romania)*. Exploratory program « Ideas » PN-II-ID-PCE-2011-3-074 (ANCS, UEFISCDI). Contract nr. 159/2011. **337,272 Euro** (PI)
- 2012-2016 *Resilience of hydrothermal systems for anthropic and natural change: case study the sulfurous thermomineral deposits from Baile Herculane, Romania*. Grant PN-II-PT-PCCA-2011-3.1-1619 (ANCS, UEFISCDI). **31,830 Euro** (Partner PI)
- 2013-2015 *Dynamics of Escherichia coli population transformed to express archaeal heterologous protein S-layer*. PN-II-RUTE-2012-3-0402 (ANCS-UEFISCDI) (member)
- 2009-2011 *Archaeal-mediated obesity control: enzymes of arginine and pyrimidine metabolism in Methanobrevibacter smithii as a target for regulating the nutrient uptake in the human gut*. PN-II-ID-PCE-2009-1034 (ANCS, UEFISCDI), Institute of Biology Bucharest, Romania. Contract nr. 1023/2009. **277,700 Euro** (PI)
- 2008-2011 *Hybrid biotechnological procedure for used water purification with high ammonia content*. CNMP-PNCIDI-II contract nr. 32-142/2008, **54,054 Euro** (Partner PI)
- 2008 *Extremophilic microorganisms: molecular adaptations and bionanotechnological applications*. PN-II-ID-WE-2008-1 Exploratory workshop grant (ANCS, UEFISCDI) Institute of Biology Bucharest, Romania (September 18-19, 2008) **51,585 Euro** (PI)
- 2006-2008 *Mitochondrial disfunction in Alzheimer: identification of a new therapeutical agent targeting the beta-amyloid interaction site with pyruvate dehydrogenase*. Grant National Program CEEEX (ANCS, UEFISCDI). Contract nr. 1491/2006 Institute of Cellular Biology and Pathology “N. Simionescu” **50,000 Euro** (PI)
- 2008-2010 *New microorganisms capable of active biopolymer synthesis using glycerol as substrate*. Grant PNCDI2 of Romanian MEC. Contract nr. 2497. (Member)
- 2006-2008 *Biotechnologies for nutraceutical products with metabolic regulation effects*. Grant CEEEX of Romanian MEC. Contract nr 2999/2006. (Member)
- 1998-2004 *Thermal adaptation of pyrimidine enzymes from extremophilic archaea*. National Science Foundation U.S.A. (grant MCB-9810325). Wayne State University, Detroit, USA. Member
- 2002-2003 *Refolding chromatography for drug target protein construction*. European project EUREKA. Avidis S.A. Clermont-Ferrand, France. (Project manager)
- 1995-1996 *Molecular studies of pyrimidine enzymes from hyperthermophilic archaea*. Grant 1-96-3-21-145-0 Onderzoeksraad (OZR), University Vrije, Brussels, Belgium. (Member)
- 1996 *Cloning of aspartate transcarbamoylase from hyperthermophilic Pyrococcus abyssi*. Grant G.0040.96, Belgian (Flanders) Nationaal Fonds voor Wetenschappelijk Onderzoek. University Vrije, Brussels, Belgium. (Member)
- 1990-1991 French Government Fellowship for Master (Diplome d'Etudes Approfondies). University Paris XI, France
- 1991-1994 French Government Fellowship for PhD. University Paris XI, France
- 1995 Federation of European Biochemical Societies Fellowship (FEBS,) Vrije University Brussels, Belgium

Annex 4

SYNERGISTIC ACTIVITIES

Reviewer for the International Peer Review Journals: Frontiers in Microbiology (2024-2025), Environment International (2022), Extremophiles (2022), Scientific Reports (2021), PLOS One (2020), Polar Biology (2019, 2020), Microorganisms (2018), Diversity (2017), Archaea (2008), Microbiological Research (2015), International Journal of Speleology (2013)

Editorial board: Frontiers in Microbiology, Frontiers in Marine Science, Romanian Archives of Microbiology and Immunology

Evaluation expert of Academic Research in Romanian Universities. Program European Social Fund, Operational Program of Human Resources Development, PTE, ID, TE, PD, FSE-POSDRU, CNCSIS – UEFISDI, Joint Projects RO-France, Research projects Republica Moldova, FONDECYT Projects (Chile) (2011-2020)

Workshop principal organizer (1) SMART DIASPORA 2025, Exploratory Workshop “Frontiere interdisciplinare ale cunoașterii: medii extreme de la trecut la viitor” Cluj-Napoca, 4-7 noiembrie 2025; **(2)** “Extremophilic microorganisms: molecular adaptations and bionanotechnological applications” Institute of Biology Bucharest, Romania (September 18-19, 2008) (Annex 3)

Scientific proofreader *Introduction a l'analyse genetique*, by Griffiths, Miller, Suzuki, Lewontin and Gelbert. Bruxelles, DeBoeck Universite, 1997 - XVIII-918 p.

Doctorate and habilitation committee member: Emil Racovita Speleology Institute, Romania (2025), Rhodes University, South Africa (2024), Vrije University, Brussels, Belgium, (2002); Institute of Biochemistry Bucharest, Romania, (2013- 2016), University Bucharest, Faculty of Biology, Romania (2013, 2014), “Alexandru Ioan Cuza” University, Iasi, Romania (2014, 2019, 2025).

Scientific leader: Antarctic Expeditions ROICE 2015 (3-23 february 2015) and ROICE 2016 (3-24 february 2016) organized by National Institute of Research and Development for Biological Sciences (INCDSB) and Korea Polar Research Institute (KOPRI)

COLLABORATIONS: Academic research groups from Romania, France, Belgium, Italy, Iceland, Norway, Denmark, Spain, Switzerland, South Korea, Chile, Argentina, USA, South Africa

SUPERVISION: 13 PhD (Romanian Academy SCOSAAR), 5 Master students, 8 postdocs

AFFILIATIONS

2025-present	Member of National Council for Scientific Research (CNCA) –Biology Commission
2025-present	Member of Advisory College for Research, Development and Innovation (CCCDI) –Commission 1 Bioeconomy and Life Science
2018-present	International Glaciology Society (IGS)
2021-2022	Member of the SCAR 2023-2028 Strategic Planning Committee, Sub-committee on Administration, Data and Products
2017-present	Romanian Delegate of The Scientific Committee on Antarctic Research (SCAR)
2015-present	Scientific Secretary of National Commission for Antarctic Research (CNCAME); Member (2012-present)
2012-2015	Committee Board Member, Romania representative, COST ES1103 Earth System Science and Environmental Management (ESSEM). Microbial ecology & the earth system
2011-2012	Member of National Committee for Academic Titles, Diplomas and Certificates Attestation (CNATDCU), Biology and Biochemistry Commission
2009	Federation of European Microbiology Society (FEMS)
1993-1996	American Society for Microbiology (ASM), U.S.A.
1992-1996	Société Française de Biochimie et Biologie Moléculaire (SFBBM), France
1991-1993	Groupe de Recherche BACTOCEAN, France

HONORS AND AWARDS

2023	INCDSB prize for Antarctic research
2015	Excellence Prize of the Romanian Government for the Antarctic Scientific Expedition ROICE 2015
2014	Romanian Academy Prize „Emil Racovita” for 2002-2014 research publications
2011	Best Poster Award - Internation IBB50 Conference, Bucharest, Romania. “Cloning and expression of carbamoyl phosphate synthetase genes from <i>Methanobrevibacter smithii</i> ” E. Popa, A. Rusu, S. Grosu-Tudor, M. Zamfir, C. Purcarea
2009	Best Poster Award (molecular biology) - XI Anniversary Scientific Conference “Biology-Traditions and Challenges”, Sofia – Bulgaria, 27-29 mai, 2009. An ammonium metabolizing enzyme from the human archaeon <i>Methanobrevibacter smithii</i> might represent a missing link in the evolution of carbamoyl phosphate synthetases E. Popa, A. Rusu, C. Purcarea
1990-1991	French Government Fellowship for Master (Diplome d’Etudes Approfondies). University Paris XI, France
1991-1994	French Government Fellowship for PhD. University Paris XI, France
1995	Federation of European Biochemical Societies Fellowship (FEBS,) Vrije University Brussels, Belgium
1995	International Human Frontiers Science Program Fellowship (HFSP), (SF-339/94), University Vrije, Brussels, Belgium
1995	Doctorate in Enzymology, Highest mention <i>Très honorable avec félicitations du jury</i> , University Paris XI, Paris, France
1994	Pret Salavin Grant, 16 th International Congress of Biochemistry and Molecular Biology, New Delhi, India
1994	ASM Travel Grant, 94 th General Meeting of the ASM, Las Vegas, USA
1988	Valedictorian, Faculty of Biochemistry, Polytechnic Institute of Bucharest, Romania

11 Septembrie 2026

Signature:

