



Curriculum vitae Europass

Personal information

First name/Surname

Cristina PURCAREA



Address

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

Telephone

+40 746 151 081

Fax

+40 21 221 9071

E-mail

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

Nationality

Romanian

Date of birth

16/01/1965

Gender

F

Position / Occupational field

Senior research scientist grade I, Institute of Biology Bucharest

Interest

Extremophilic microorganisms, microbial diversity, ecology and evolution. Genetic diversity and population dynamics of Bacteria and Archaea in Polar and alpine glacial environments. Structure-function relationship in extremozymes of pyrimidine metabolism. Regulation of biodiversity and adaptability of microbial communities to external stress factors. Molecular adaptation mechanisms to extreme environments. Human archaeal microbiota. Nanotechnologies and medical applications of extremophiles and extremozymes. Forensic microbiology.

Work experience

Dates

2007 - present

Occupation or position held

Senior research scientist grade I

Main activities and responsibilities

Basic research, Head of the Laboratory of Molecular Microbiology and Biochemistry of Extremophiles, Antarctic, Arctic and ice cave microbiology and molecular biology, archaea, thermal adaptation mechanisms, phylogeny. Scientific Leader of ROICE Antarctic Expeditions at King Sejong Station (NW Antarctica). **32 publications** in scientific journals and **4 book chapters**. More than **350 citations**, and **Hirsch index 12** (ISI database). **PI, CO-PI** and **member of 20** international and national **grants**, **27 years of research experience**, with **15 years in Universities and Research Institutions from France, Belgium and USA**.

Name and address of employer

Department of Microbiology, Institute of Biology Bucharest
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 ()*

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production		Listening	
C2	Advanced	C2	Advanced	C2	Advanced	C2	Advanced	C2	Advanced
C2	Advanced	C2	Advanced	C2	Advanced	C1	Advanced	C2	Advanced

(*) [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 *Research* - 26 years experience in academic and biotechnology company laboratories from Romania (10 years), France (7 years), Belgium (1 year), USA (7 years): protein biochemistry, biophysics, enzymology, microbiology, molecular biology, X-ray crystallography.

(1) Study of microbial diversity and molecular adaptation to extreme temperatures of extremophilic bacteria and archaea.

(2) Structure-function relationship of extremozymes from bacteria and archaea. Metabolism evolution of extremophilic microorganisms and adaptation mechanisms to high/low temperatures and hydrostatic pressure.

Fieldwork (caves - Romania, glaciers - Antarctica) – molecular microbiology, ice cave ecosystems, speleology

Equipment usage: ice-drilling system, PCR, R-PCR, 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 softwares

Artistic skills and competences Writing

Other skills and competences Mountaineering, ski, swimming

Driving license B

Additional information

Hirsch index = 12

Current research programs:

- 2016-2018 Microorganisms in warming Arctic environments (**H2020-ITN**, Partner 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)
- 2019-2011 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

Submitted articles

1. Itcus C, Pascu D, Hillebrand-Voiculescu A, Persoiu A, Brad T, **Purcarea C**. Prokaryotic community structure of Scarisoara Cave ice block layers by 454 pyrosequencing of 16S RNA gene. PLOS ONE, *Submitted*.

Book chapters

1. **Purcarea C** (2017) *Microbial Life in Ice Caves*. in Perşoiu, A. and Lauritzem S.-E., Ice caves, Elsevier, *in press*
2. 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, editori: Alina Catrinel Ion, Dan Dascalu, Gabriela Carja, Magdalena Lidia Ciurea, Ed. Acad. Romane, ISBN: 978-973-27-2434-7
3. **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)
4. **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. Vasilescu A, **Purcarea C**, Popa E, Zamfir M, Mihai I, Litescu S, David S, Gaspar S, Gheorghiu M, Jean-Louis Marty (2016) Versatile SPR aptasensor for detection of lysozyme dimer in oligomeric and aggregated mixtures. *Biosens Bioelectron.* 83:353-360. doi: 10.1016/j.bios.2016.04.080.
2. Itcus C, Pascu M-D, Brad T, Persoiu A, **Purcarea C** (2016) Diversity of cultured bacteria from the perennial ice block of Scarisoara Ice Cave, Romania. *Int J Speleol*, 45 (1), 89-100, <http://dx.doi.org/10.5038/1827-806X.45.1.1948>
3. Iancu L, Sahlean T, **Purcarea C** (2015) Dynamics of Necrophagous Insect and Tissue Bacteria for Postmortem Interval Estimation During the Warm Season in Romania. *J Med Entomol.* 53(1):54-66, doi: 10.1093/jme/tjv156
4. Iancu L, Carter DO, Junkins EN, **Purcarea C** (2015) Using Bacterial and Necrophagous Insect Dynamics for Post-Mortem Interval Estimation during Cold Season: Novel Case Study in Romania. *Forensic Sci Int.* 254: 106-117. doi:10.1016/j.forsciint.2015.07.024
5. Iancu L, **Purcarea C** (2015) First record of *Meroplius fukuharai* (Iwasa 1984) (Diptera: Sepsidae) on Romanian territory. *Travaux du Muséum National d'Histoire Naturelle. «Grigore Antipa»*, 57:121-125.
6. Brad T, Fekete A, Sandor MS, **Purcarea C** (2014) Natural attenuation potential of selected karst systems in Carpathian Mountains (Romania). *Water Sci. Technol.* 15: 196-206. doi: 10.2166/ws.2014.092
7. Hillebrand-Voiculescu A, Itcus C, Ardelean I, Pascu D, Persoiu A, Rusu A, Brad T, Popa E, Onac BP, **Purcarea C** (2014) Searching for cold-adapted microorganisms in the underground glacier of Scarisoara Ice Cave, Romania. *Acta Carsologica*, 43/2-3: 319-329 DOI: <http://dx.doi.org/10.3986/ac.v43i2-3.604>
8. Iancu L, **Purcarea C** (2014). First record of *Themira nigricornis* (Sepsidae: Diptera) in Romania. *Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»*, 57: 27-33
9. Hillebrand-Voiculescu A, Rusu A, Itcus C, Persoiu A, Brad T, Pascu D, Ardelean I, Onac BP, **Purcarea C** (2013) Bacterial 16S-rRNA gene clone library from recent ice stalagmites of Scarisoara cave. *Rom. J. Biochem.* 50(2):109-118
10. Popa E, Perera N, Kibédi-Szabo CZ, Guy-Evans H, Evans DR, **Purcarea C.** (2012) The Smallest Active Carbamoyl Phosphate Synthetase Was Identified in the Human Gut Archaeon *Methanobrevibacter smithii*, *J Mol Microbiol Biotechnol* 22:287-299
11. Popa E, Rusu A, **Purcarea C.** (2011) *Methanobrevibacter smithii* carbamoyl phosphate synthetase, a missing link and a putative target for obesity prevention, *Curr Opin Biotech*, 22, Supplement 1: S81-S81.
12. Popa E., Rusu A., Zamfir M., Dumitru L., **C. Purcarea** (2009) An ammonia-metabolizing enzyme from the human archaeon *Methanobrevibacter smithii* might represent a missing link in the evolution of carbamoyl phosphate synthetases. *Biotechnology and Biotechnological Equipment*, 23(2): 533-537.
13. Zhang P, Martin PD, **Purcarea C**, Vaishnav A, Brunzelle JS, Fernando R, Guy-Evans HI, Evans DR, Edwards BF (2009) Dihydroorotase from the hyperthermophile *Aquifex aeolicus* is activated by stoichiometric association with aspartate transcarbamoylase and forms a one-pot reactor for pyrimidine biosynthesis. *Biochemistry.* 48: 766-78
14. **Purcarea C.** Roshini F, Guy HI, Evans DR. The Sole Serine/threonine Protein Kinase and its Cognate Phosphatase from *Aquifex aeolicus* Targets Pyrimidine Biosynthesis. (2008) *Mol Cell Biochem.* 311:199-213, doi: 10.1007/s11010-008-9710-z
15. Martin P, **Purcarea C**, Vickrey JF, Evans DR, Guy HI, Edwards BFP (2005) The crystal structure of a novel, one-zinc dihydroorotase from *Aquifex aeolicus*. *J Mol Biol.* 348:535-47.

16. Kothe, M., **Purcarea, C.**, Guy, H., Evans, D.R., Powers-Lee, S. (2005) Direct Demonstration of Carbamoyl Phosphate Formation on the C-terminal Domain of Carbamoyl Phosphate Synthetase. *Protein Sci.* 14, 37-44
17. Ahuja A, **Purcarea C**, Ebert R, Guy HI, Evans DR (2004) Aquifex aeolicus dihydroorotase: association with aspartate transcarbamoylase switches on catalytic activity. *J Biol Chem.* 279, 53136-53144
18. **Purcarea, C**, Lu, T., Ahuja, A., Kovari L., D.R. Evans. (2003) *Aquifex aeolicus* aspartate transcarbamoylase: an enzyme specialized for the efficient utilization of unstable carbamoyl phosphate at elevated temperature. *J. Biol. Chem.* 27, 52924-52934.
19. **Purcarea C**, Martin P, Vickrey JF, Guy HI, Edwards BFP Evans DR (2002) Cloning, Expression and Preliminary X-ray Analysis of the Dihydroorotase from the Hyperthermophilic Eubacterium *Aquifex aeolicus*. *Acta Crystallographica Section D Biological Crystallography* 58, 154-156
20. Ahuja A, **Purcarea C**, Guy HI, Evans DR (2001) A novel carbamoyl phosphate synthetase from *Aquifex aeolicus*. *J. Biol. Chem.* 276:45694-45703.
21. **Purcarea C**, Herve G, Cunin R, Evans DR (2001) Cloning, expression and structure analysis of carbamate kinase-like carbamoyl phosphate synthetase from *Pyrococcus abyssi*. *Extremophiles.* 5:229-239.
22. Simon V, **Purcarea C**, Sun K, Joseph J, Frebourg G, Lechaire J-P, Gaill F, Herve G (2000) The enzymes involved in synthesis and utilization of carbamylphosphate in the deep-sea tube worm *Riftia pachyptila*. *Marine Biology*, 136:115-127.
23. Watrin L, Lucas S, **Purcarea C**, Legrain C, Cunin R, Prieur D (1999) Isolation and characterization of pyrimidine auxotrophs and molecular cloning of the *pyrE* gene from the hyperthermophilic archaeon *Pyrococcus abyssi*. *Mol. Gen. Genet.* 262:378-381.
24. **Purcarea C**, Evans DR, Herve G (1999) Channeling of carbamoyl phosphate to the pyrimidine and arginine biosynthetic pathways in the deep-sea hyperthermophilic archaeon *Pyrococcus abyssi*. *J. Biol. Chem.* 274: 6122-6129.
25. Labedan, B., Boyen, A., Baetens, M., Charlier, D., Chen, P, Cunin, R., Durbecq, V., Glansdorff, N., Herve, G., Legrain, C., Liang, Z., **Purcarea, C.**, Roovers, M., Sanchez, R., Toong, T.L., Van de Castele, M., Van Vliet, F., Xu, Y., Zhang, Y-F. (1999) The evolutionary history of carbamoyltransferases: a complex set of paralogous genes was already present in the last universal common ancestor. *J. Mol. Evol.*, 49: 461-473.
26. **Purcarea C**, Herve G, Ladjimi MM, Cunin R (1997) Aspartate transcarbamylase from the deep-sea hyperthermophilic archaeum *Pyrococcus abyssi*; genetic organization, structure and expression in *Escherichia coli*. *J. Bacteriol.* 179:4143-4157.
27. **Purcarea C**, Herve G, Ladjimi MM, Cunin R (1997) Aspartate transcarbamylase from the hyperthermophilic deep-sea archaeum *Pyrococcus abyssi* I. Cloning, functional and structural analysis. *Arch Physiol Biochim*, 104:B58
28. **Purcarea C**, Herve G, Cunin R (1997) Aspartate transcarbamylase from the hyperthermophilic deep-sea archaeum *Pyrococcus abyssi* II. Expression in the mesophilic eubacterial host *Escherichia coli*. *Arch Physiol Biochim*, 104:B59
29. **Purcarea C**, Simon V, Prieur D, Herve G (1996) Purification and characterization of carbamylphosphate synthetase from the deep-sea hyperthermophilic archaeobacterium *Pyrococcus abyssi*. *Eur. J. Biochem.* 236:189-199.
30. **Purcarea C**, Herve G, Cunin R (1996) Aspartate transcarbamylase from a deep sea hyperthermophilic archaea (*Pyrococcus abyssi*). *FASEB J*, 10:A123.
31. **Purcarea C**, Erauso G, Prieur D, Herve G (1994) The catalytic and regulatory properties of aspartate transcarbamoylase from *Pyrococcus abyssi*, a new deep-sea hyperthermophilic archaeobacterium. *Microbiology.* 140:1967-1975.
32. Sahini VE, **Pop C**, (1989) A molecular orbital approach to some radiogenetic mechanisms. *Revue Roumaine de Chimie.* 34(1): 253-257.

Gene sequences and cristallographic coordonates

1. Bacterial 16S rRNA gene fragments from DGGE analysis of cultivated strains from Scarisoara Ice cave (KF85203-KF853221, KJ454416-KJ454425, and KP219085-KP219133)
2. *Pyrococcus abyssi* aspartate transcarbamylase catalytic chain (*pyrB*) and aspartate transcarbamylase regulatory chain (*pyrI*) genes. **C. Purcarea**, G. Herve, R. Cunin (ACC# U61765)
1. *Pyrococcus abyssi* carbamate kinase-like carbamoyl phosphate synthetase (*cpkA*) gene. **C. Purcarea**, G. Herve, R. Cunin, D.R. Evans (ACC# AF081680)
2. Chain A, The crystal structure of a novel, latent dihydroorotase from *Aquifex aeolicus* at 1.7 Å resolution. Martin PD, **Purcarea C**, Zhang P, Vaishnav A, Sadecki S, Guy HI, Evans DR, Edwards BF (ACC# 1XRT_A)
3. Chain B, The crystal structure of a novel, latent dihydroorotase from *Aquifex aeolicus* at 1.7 Å resolution. Martin PD, **Purcarea C**, Zhang P, Vaishnav A, Sadecki S, Guy HI, Evans DR, Edwards BF (ACC# 1XRT_B)
4. Orotate phosphoribosyltransferase [*Pyrococcus abyssi*]. Watrin L, Lucas S, **Purcarea C**, Legrain C, Cunin R, Prieur D (ACC# AAD47891)
5. Ornithine carbamoyltransferase [*Pyrococcus abyssi*]. Cunin R, Seumois G, **Purcarea C**, Van Vliet F, Legrain C (ACC# AAD09004)

CONFERENCES

1. **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 *Glaciibacter superstes* involved in pyrimidine nucleotide biosynthesis. Mondini A, Purcarea C. [Poster](#)
2. **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](#).
3. **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](#)
4. **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](#)
5. **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, Purcarea 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](#).
6. **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](#).
7. **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](#).
8. **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](#)
9. **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](#).
10. **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](#)
11. **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](#).
12. **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](#).
13. **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](#).
14. **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](#).
1. **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](#).
2. **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](#).

3. **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*.
4. **International Exploratory Workshop “Extremophilic microorganisms: molecular adaptations and bionanotechnological applications”**, Bucuresti, 18-19 septembrie 2008. Carbamoyl phosphate synthesis in hyperthermophiles. C. Purcarea. *Oral presentation*
5. **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*.
6. **2nd International Symposium of Polar Scientific Research**, Bucuresti – Romania, 16-17 Noiembrie 2007. Temperature adapted microbial enzymes. C. Purcarea. *Oral presentation*.
7. **Conferinta Internationala de Chimie-Fizica „ROMPHYSHEM-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*.
8. **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*.
9. **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*.
10. **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*.
11. **Guest speaker** Rutgers University, Cook College, Dept. of Biochemistry & Microbiology, New Brunswick, NJ, USA. March 9, 2001.
12. **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*.
13. **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*.
14. **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*.
15. **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*.
16. **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*.
17. **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*.
18. **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 hyperthermophilic archaeobacterium *Pyrococcus abyssi* in *Escherichia coli*; C. Purcarea, G. Herve, R. Cunin. *Poster*.
19. **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*.
20. **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*.
21. **'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*.
22. **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*.
23. **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*.
24. **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*.

25. **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*.
26. **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*.

NATIONAL EVENTS

1. **56th Scientific Conference, Institute of Biology Bucharest**, December 9, 2016, Bucuresti. Comunități microbiene din peștera Ghețarul Scărișoara. Iteus C, Pascu MD, Hillebrand-Voiculescu A, Persoiu A, Brad T, Ardelean I, Purcarea C. Oral presentation
2. **Scientific Conference, Institute of Biology Bucharest**, December 10, 2009. (1) Cloning and expression of carbamoyl phosphate synthetase from the intestinal archaeon *M. smithii*. (2) Missing link carbamoyl phosphate synthetase from *Methanobrevibacter smithii*. (3) Glutamin synthase from methanogenic *M. smithii* and its putative role in obesity prevention. Posters
3. **Guest speaker - Summer School „Macro, micro and nano biological complexity”, the Institute of Biology Bucharest**, July 8-10, 2009. Synthesis of carbamoyl phosphate in hyperthermophiles. Oral presentation.
4. **Guest speaker - Institute of Biochemistry Bucharest, Romania**. May 29, 2009. Carbamoyl phosphate synthetase is hyperthermophiles. Oral presentation.
5. **Guest speaker- Summer School „Adaptation to stress” Institute of Biology Bucharest, Romania**. October 31 –November 2, 2007. Molecular adaptations to high temperatures. Oral presentation.

RESEARCH GRANTS

- 2017-2018 Novel aldehyde dehydrogenase from Antarctic bacterium as highly efficient catalyst for low temperature biosensing and biotechnologies (COLDSENSOR). PN-III-P2-2.1-PED-2016-0116. **133,852 Euro**. (Principal investigator)
- 2016-2020 *Microorganisms in Warming Arctic Environments*. Grant H2020-MSCA-ITN-2014. ETN 642614. **215,069 Euro** (Partner principal investigator)
- 2016-2018 *Cave ice microbiom: metabolic diversity and activity in response to climate dynamics and anthropogenic pollution*. Grant ELAC2014/DCC-0178. **702,999 Euro** (Principal investigator)
- 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** (Principal investigator)
- 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** (Principal investigator)
- 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 principal investigator)
- 2013-2015 *Dynamics of Escherichia coli population transformed to express archaeal heterologous protein S-layer*. PN-II-RU-TE-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*. National Exploratory program « Ideas » (ANCS, UEFISCDI), Institute of Biology Bucharest, Romania. Contract nr. 1023/2009. **277,700 Euro** (Principal investigator)
- 2008-2011 *Hybrid biotechnological procedure for used water purification with high ammonia content*. Grant CNMP of Romanian MEC, contract nr. 32-142/2008, **54,054 Euro** (Partner principal investigator)
- 2008 *Extremophilic microorganisms: molecular adaptations and bionanotechnological applications*. Exploratory workshop grant (ANCS, UEFISCDI) Institute of Biology Bucharest, Romania (September 18-19, 2008) **51,585 Euro** (Principal investigator)
- 2006-2008 *Mitochondrial disfunction in Alzheimer: identification of a new therapeutical agent targeting the beta-amyloid interaction site with pyruvate dehydrogenase*. Grant National Program CEEX (ANCS, UEFISCDI). Contract nr. 1491/2006 Institute of Cellular Biology and Pathology “N. Simionescu” **50,000 Euro** (Principal investigator)
- 2013-2015 *Dynamics of Escherichia coli population transformed to express archeal heterologous protein S-layer*. National grant PNII-RU-TE-2012-3 (Member)
- 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 CEEX 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
- 1995 International Human Frontiers Science Program Fellowship (HFSP), (SF-339/94), University Vrije, Brussels, Belgium

SYNERGISTIC ACTIVITIES

Editorial board: Romanian Archives of Microbiology and Immunology

Reviewer for the International Peer Review Journals: Journal of Biological Chemistry (2005), Biochemistry (2006), Protein Science (2006), Archaea (2008), International Journal of Speleology (2013), Microbiological Research (2015), Romanian Archives of Microbiology and Immunology

Evaluation expert of Academic Research in Romanian Universities. Program European Social Fund, Operational Program of Human Resources Development, FSE-POSDRU, CNCSIS – UEFISCSU (2011)

Workshop principal organizer “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 committee member: Vrije University, Brussels, Belgium, (2002); Institute of Biochemistry Bucharest, Romania, (2016 - 2013), University Bucharest, Faculty of Biology, Romania (2013).

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)

AFFILIATIONS

2017-present	Romanian Delegate of The Scientific Committee on Antarctic Research (SCAR)
2015-present	Scientific Secretary of National Commission for Antarctic Research (CNCA), Life Science. 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

- 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 *Methanobrevibacter smithii*” 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 *Methanobrevibacter smithii* 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 *Très honorable avec félicitations du jury*, University Paris XI, Paris, France
- 1994 Pret Salavin Travel Grant, 16th International Congress of Biochemistry and Molecular Biology, New Delhi, India
- 1994 ASM Travel Grant, 94th General Meeting of the ASM, Las Vegas, USA
- 1988 Valedictorian, Faculty of Biochemistry, Polytechnic Institute of Bucharest, Romania

5 octombrie 2017

