Chiara Perruchon

CURRICULUM VITAE ET STUDIORUM

PERS+ONAL DETAILS**
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DATE OF BIRTH: 18th April 1984
PLACE OF BIRTH: Voghera (PV), Italy
NATIONALITY: Italian

EDUCATION

01/10/2003 *to* 24/07/2006: ***Laurea di primo livello*** (3-year undergraduate course, Bachelor of Science equivalent) in Biotechnology at the University of Pavia, Italy.
Final grade after thesis dissertation: 110/110 *cum laude*.
Thesis work, under the supervision of Dr. S. Asticcioli, in the "Laboratory of Microbiology" of the University of Pavia, Principal Investigator: Prof. L. Pagani.
Thesis title: "Prevalenza e sensibilità in vitro agli antifungini di isolati di *Candida spp*. da micosi profonde" (Prevalence and in vitro sensitivity to antifungal agents of *Candida spp*. isolates from deep mycosis).

01/10/2006 *to* 05/02/2009: ***Laurea Magistrale*** (2-year course, Master of Science equivalent) in Industrial Biotechnology at the University of Pavia, Italy.
Final grade after thesis dissertation: 110/110 *cum laude*.
Thesis work on the ability of selected fungi to degrade some pesticides for the creation of a biofilter, as a guest in Dr. Dimitrios Karpouzas' laboratory in the Department of Biochemistry and Biotechnology of the University of Thessaly, Larissa, Greece.
Thesis title: "The use of selected fungi for the degradation of pesticides contained in post-harvest treatments wastewaters".

21/10/2009 – 12/06/2014: **PhD** in the area of Environmental Microbiology and Biotechnology, Department of Biochemistry and Biotechnology of the University of Thessaly, Larissa, Greece.
Final grade after thesis dissertation: Excellent.
Thesis work on the isolation and characterization of bacteria able to degrade different pesticides under the supervision of Dr. D. Karpouzas. Doctoral fellow was sponsored by the State Scholarship Foundation of Greece (I.K.Y.).
Thesis title: "Isolation and study of bacteria able to degrade pesticides contained in the wastewaters produced by the fruit-packaging industry".

PROFESSIONAL EXPERIENCE

23/06/2014 - 1/08/2014:

Short scientific visit to UFZ-Leipzig (Germany) through the project ISOPED funded by the IKY-DAAD exchange program: *Do we isolate via in vitro enrichment cultures the right pesticide-degrading bacteria? Mechanisms involved and web-food C transfer*. Duration: 1/01/2014-31/12/2015.

1/09/2014 - 1/03/2015:

Participation to the Industry-Academia Partnership Project (IAPP) Marie Curie project, *Pesticides – Felicity or curse for the soil microbes (Acronym: LOVE-TO-HATE)*. Duration: 1/01/2013 – 31/12/2016. Hosted by ENOVEO, Lyon, France. Website: http://lovetohate.bio.uth.gr

15/03/2015-15/08/2015:

PostDoctoral position at the University of Thessaly in the project "BIOREMEDIATOMICS" implemented under the "ARISTEIA" Action of the "OPERATIONAL PROGRAMME EDUCATION AND LIFELONG LEARNING", co-funded by the European Social Fund (ESF) and National Resources.

15/11/2015 - 15/12/2015:

Short scientific visit to UFZ-Leipzig (Germany) through the project ISOPED funded by the IKY-DAAD exchange program: *Do we isolate via in vitro enrichment cultures the right pesticide-degrading bacteria? Mechanisms involved and web-food C transfer*. Duration: 1/01/2014-31/12/2015.

25/7/2016 – 20/6/2017:

PostDoctoral fellow, University of Thessaly, Department of Biochemistry and Biotechnology, Laboratory of Plant and Environmental Biotechnology. Project LOVE-TO-HATE *Pesticides – Felicity or curse for the soil microbes.* General Secretariat of Research and Technology (matching funds).

1/02/2018-30/04/2019:

PostDoctoral fellow, University of Thessaly, Department of Biochemistry and Biotechnology, Laboratory of Plant and Environmental Biotechnology. Project "OMIC-ENGINE".

1/10/2019-today:

PostDoctoral fellow, University of Thessaly, Department of Biochemistry and Biotechnology, Laboratory of Plant and Environmental Biotechnology. Project "Environmental fate and interaction of the veterinary antibiotics ceftiofur and tiamulin with the soil microbial community: resistance, biodegradation or ecotoxicity?"

LANGUAGES

MOTHER TONGUE: Italian

OTHER LANGUAGES: English: Proficient (Michigan ECPE certificate);

Greek: Intermediate;
French: Basic.

COMPUTER SKILLS

Thorough knowledge of Windows operating systems.

LABORATORY SKILLS

- Chromatographic analysis of pesticides (HPLC-UV, HPLC-PDA)
- Spectrophotometric measurements
- Bacteria and fungi growth techniques
- Molecular Biological Techniques: DNA/RNA/protein extraction from bacteria and environmental matrices, cDNA synthesis, PCR, qPCR and RT-qPCR, DGGE, clone libraries, mini and midi-scale plasmid extraction, RISA, Stable Isotope Probing, T-RFLP, fosmid libraries, heterologous expression of proteins, SDS-page.
- Basic knowledge of bioinformatic tools for bacterial isolation and identification.

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Karas P., **Perruchon C.,** Exarhou C., Ehaliotis C., Karpouzas DG., 2011. Potential for bioremediation of agro-industrial effluents with high loads of pesticides by selected fungi. *Biodegradation* 22: 215-228.
2. Moulas C., Petsoulas C., Rousidou C., **Perruchon C**., Karas P., Karpouzas D.G., 2013. The effects of systemic pesticides imidachloprid and metalaxyl on the phyllosphere of pepper plants. *BIOMED Res. Int.,* Vol. 2013, Article ID 969750,, http://dx.doi.org/10.1155/2013/969750.
3. Campos M., **Perruchon C**., Vasileiadis S., Menkissoglu-Spiroudi U., Karpouzas D. G., Diez M. C., 2015. Isolation and characterization of bacteria from acidic pristine soil environment able to transform iprodione and 3,5-dichloraniline. *Int. Biodeter. Biodegr*., 104: 201-211.
4. **Perruchon C**., Zouborlis S., Batianis C., Papadopoulou E., Ntougias S., Vasileiadis S., Karpouzas D. G., 2015. Isolation of a diphenylamine-degrading bacterium and characterization of its metabolic capacities, bioremediation and bioaugmentation potential. *Environ. Sci. Pollut. Res.,* 22 (24): 19485-19496.
5. **Perruchon C.**, Patsioura V., Vasileiadis S., Karpouzas D. G., 2016. Isolation and characterization of a *Sphingomonas* strain able to degrade the fungicide *ortho*-phenylphenol. *Pest Manag. Sci.*, 72: 113-124.
6. Karas P., **Perruchon C**., Karanasios E., Papadopoulou E., Manthou E., Sitra S., Ehaliotis C., Karpouzas D. G., 2016. Integrated biodepuration of pesticide-contaminated wastewaters from the fruit-packaging industry: bioaugmentation, risk assessment and optimized management. *J. Haz. Mat.*, 320:635-644.

7. Campos M., Karas P., Papadopoulou E.S., **Perruchon C.,** Christou V., Menkissoglou-Spiroudi U., Diez M.C., Karpouzas D.G., 2017. Novel insights into the metabolic pathway of iprodione by soil bacteria. *Environ. Sci. Pollut. Res.,* 24 (1): 152-163.

8. Campos M., **Perruchon C.,** Karas P., Karavasilis D., Diez M.C., Karpouzas D.G., 2017. Bioaugmentation and rhizosphere-assisted biodegradation as strategies for optimization of the dissipation capacity of biobeds. *J. Environ. Manag.,* 187:103-110.

9. **Perruchon C**., Chatzinotas A., Omirou M., Vasileiadis S., Menkissoglou-Spiroudi U., Karpouzas D.G., 2017. Isolation of a bacterial consortium able to degrade the fungicide thiabendazole: the key role of a *Sphingomonas* phylotype. *Appl. Microbiol. Biotechnol*., 101 (9): 3881-3893.

10. P**erruchon C.,** Pantoleon A., Veroutis D., Gallego-Blanco S., Martin-Laurent F., Liadaki K., Karpouzas D.G., 2017. Characterization of the biodegradation, bioremediation and detoxification capacity of a bacterial consortium able to degrade the fungicide thiabendazole. *Biodegradation*, doi:10.1007/s10532-017-9803-z.

11. **Perruchon C**., Vasileiadis S., Rousidou C., Papadopoulou E.S., Tanou G., Samiotaki M., Garagounis C., Molassiotis A., Papadopoulou K.K., Karpouzas D.G., 2017. Metabolic pathway and cell adaptation mechanisms revealed through genomic, proteomic and transcription analysis of a *Sphingomonas haloaroma*ticamans strain degrading *ortho*-phenylphenol. *Sci. Rep*., 7 (6449), doi:10.1038/s41598-017-06727-6.7

12. Papadopoulou E.S., Genitsaris S., Omirou M., **Perruchon C**., Stamatopoulou A., Ioannides I., Karpouzas D.G., 2017. Bioaugmentation of thiabendazole-contaminated soils from a wastewater disposal site: Factors driving the efficacy of this strategy and the diversity of the indigenous soil bacterial community. *Environ. Pollut.,* 233: 16-25.

13. Papadopoulou E.S. [+], **Perruchon C**. [+], Vasileiadis S., Rousidou C., Tanou G., Samiotaki M., Molassiotis A., Karpouzas D.G., 2018. Metabolic and evolutionary insights in the transformation of diphenylamine by a *Pseudomonas putida* strain unravelled by genomic, proteomic and transcription analysis. *Front. Microbiol.,* 9: 676, doi: 10.3389/fmicb.2018.00676. ([+] E.S.P. and C.P. contributed equally to this work.)

14. Storck V., Nikolaki S., **Perruchon C.**, Chabanis C., Sacchi A., Pertile G., Baguelin C., Karas P., Spor A., Devers M., Papadopoulou E., Sibourg O., Maladain C., Trevisan M., Ferrari F., Karpouzas D., Tsiamis G., Martin-Laurent F., 2018. Lab to field assessment of the ecotoxicological impact of chlorpyrifos, isoproturon or tebuconazole on the diversity and composition of the soil bacterial community. *Front. Microbiol*., 9: 1412, doi: 10.3389/fmicb.2018.01412

15. Lagos E., **Perruchon C.**, Katsoula A., Karpouzas D. G., 2018. Isolation and characterization of soil bacteria able to rapidly degrade the nematicide fosthiazate. *Lett, Environ. Microbiol.,* submitted. The isolation and characterization of soil bacteria able to rapidly degrade the organophosphorus nematicide fosthiazate. *Lett. Appl. Microbiol.,* 68 (2):149-155.

16. Storck V., Gallego S., Béguet J., Rouard N., Hussain S., Baguelin C., Vasileiadis S., **Perruchon C.**, Devers-Lamrani M., Karpouzas D. G., Martin-Laurent F., 2019. Insights into the function

and horizontal transfer of isoproturon-degrading *pdmAB* genes in a biobed system. *Appl. Env. Microbiol., submitted.*

17. Vasileiadis S., **Perruchon C.,** Scheer B., Adrian L., Steinbach N., Trevisan M., Plaza-Bolaños P., Agüera A., Chatzinotas A., Karpouzas G. D., 2019. Nutritional inter-dependencies and a carbazole-dioxygenase are key elements of a bacterial consortium relying on a *Sphingomonas* for the degradation of the fungicide thiabendazole. *mBio, submitted.*
18. Perruchon C. [+], Vasileiadis S. [+], Papadopoulou E. S., Karpouzas D. G., 2019. Genome-based metabolic reconstruction unravels the key role of B12 in methionine auxotrophy of an *ortho*-phenylphenol-degrading *Sphingomonas haloaromaticamans*. *Front. Microbiol., submitted*. ([+] C.P. and S.V. contributed equally to this work.).

ABSTRACTS IN CONFERENCES

1. Karas P., **Perruchon C.,** Ehaliotis C., Karpouzas D.G., 2008. The use of selected fungi for the degradation of pesticides in agro-industrial wastewaters. 1st National Conference of the Scientific Society Mikrobiokosmos, 12-14 December 2008, Athens, Greece (oral presentation).
2. **Perruchon C.,** Karas P., Karpouzas D.G., 2010. The potential biotechnological amelioration of biobed-biofilter system for treating wastewaters from the fruit packaging industry. 3rd European Biobed Workshop, 31 August -1 September 2010, Piacenza, Italy (poster).
3. **Perruchon C.,** Karas P., Ehaliotis C., Karpouzas D.G., 2010. Isolation of bacterial consortia rapidly degrading the fungicide thiabendazole-potential utilization for the depuration of wastewaters from fruit packaging plants. 3rd Symposium of the Society of Mikrobiokosmos, 16-18 December 2010, Thessaloniki, Greece (poster).
4. **Perruchon C.,** Karas P., Patsioura V., Karpouzas D.G., 2011. Towards the development of a biofilter for treating pesticide-contaminated wastewaters from the fruit packaging industry. XIV Symposium in Pesticide Chemistry, 30 August-1 September, Piacenza, Italy (oral presentation).
5. **Perruchon C,** Patsioura V, Vasileiadis S., Puglisi E, Trevisan M, Karpouzas D.G., 2012. Isolation, characterization and genomic analysis of a P. stutzeri strain OPP26 which is able to rapidly degrade the fungicide 2-phenylphenol. 5th Symposium of the Society of Mikrobiokosmos, 13-15 December 2012, Athens, Greece (poster).
6. **Perruchon C,** Vasileiadis S, Puglisi E, Trevisan M, Karpouzas D.G., 2013. Isolation, characterization and genomic analysis of bacteria rapidly degrading the fungicide 2-phenylphenol. FEMS conference, Leipzig, Germany, 21-25 July 2013 (poster).
7. Karas P., **Perruchon C**., Omirou M., Ehaliotis, C., Karpouzas D.G., 2013. The use of biobeds for the depuration of wastewaters from the fruit packaging industry – Turning from on-farm to post-farm applications. 4th European Biobeds Meeting, Wageningen, The Netherlands (oral presentation).
8. Campos M., Karpouzas D. G., **Perruchon C**., Cartes A., Diez M. C., 2014. Isolation of similar iprodione pesticides and their dichoroanilines (DCAs) metabolites by pesticides-degrading rhizobacteria. 9th International Conference ORBIT 2014 New Challenges, New Responses in the 21st Century Gödöllő, Hungary, 26-28 June 2014 (poster).

9. **Perruchon C.**, Rousidou K., Vasileiadis S., Amoutzias G., Papadopoulou E., Tanou G., Molassiotis A., Karpouzas D. G., 2014. Isolation and characterization of bacteria able to degrade pesticides used in the fruit-packaging industry. First Global Soil Biodiversity Conference, Dijon, France, 2-5 December 2014 (poster).

10. **Perruchon C**., Pantoleon A., Chatzinotas A., Vasileiadis S. , Omirou M., Karpouzas D. G., 2015. Isolation of bacterial consortia degrading the fungicide thiabendazole and identification of the role of their members via SIP-DGGE and q-PCR analysis. 6th Symposium of the Society of Mikrobiokosmos, Athens, Greece, 3-5 April 2015 (poster). Best poster award.

11. **Perruchon C**., Rousidou K., Papadopoulou E. S., Batianis C., Zouborlis S., Vasileiadis S., Tanou G., Molassiotis A., Amoutzias G., Karpouzas D. G., 2015. Isolation and proteogenomic characterization of a diphenylamine-degrading *Pseudomonas putida* bacterium. 6th Symposium of the Society of Mikrobiokosmos, Athens, Greece, 3-5 April 2015 (poster).

12. **Perruchon C**., Papadopoulou E. S., Rousidou K., Vasileiadis S., Tanou G., Amoutzias G., Karpouzas D. G., 2015. A proteogenomic analysis of a *Sphingomonas haloaromaticamans* strain able to degrade the fungicide ortho-phenylphenol used in the fruit-packaging industry. 6th Symposium of the Society of Mikrobiokosmos, Athens, Greece, 3-5 April 2015 (oral presentation).

13. **Perruchon C.,** Papadopoulou E., Rousidou K., Vasileiadis S., Tanou G., Molassiotis A., Amoutzias G., Karpouzas D.G., 2015. Isolation and proteogenomic analysis of a *Sphingomonas haloaromaticamans* strain able to degrade the fungicide *ortho*-phenylphenol used in the fruit-packaging industry. 13th Symposium on Bacterial Genetics and Ecology (BAGECO), Milan, Italy, 14-18 June 2015 (poster).

14. **Perruchon C**., Pantoleon A., Chatzinotas A., Donner E., Vasileiadis S., Karpouzas D. G., 2015. Deciphering the roles of the members of a bacterial consortium in the degradation of thiabendazole: combining SIP-DGGE with meta-omics. 13th Symposium on Bacterial Genetics and Ecology (BAGECO), Milan, Italy, 14-18 June 2015 (poster).

15. Papadopoulou E. S., **Perruchon C**., Omirou M., Stamatopoulou N., Karpouzas D. G., 2015. Bioaugmentation as a depuration treatment for soils polluted with pesticides from the fruit-packaging industry wastewater. 2nd Environmental Conference of Thessaly, Skiathos Island, Greece, 26-28 September 2015 (oral presentation).

16. **Perruchon C.,** Papadopoulou E. S., Rousidou K., Vasileiadis S., Tanou G., Karpouzas D. G.**,** 2016. "A proteogenomic approach to elucidate the metabolic pathway of the fungicide *ortho*-phenylphenol by a *Sphingomonas haloaromaticamans* strain." 1stABBEM conference: Applied Biotechnology, Biodegradation and Environmental Management: Bridging the Gap between Academia and Industry, Agrinio, Greece, 28-29 January 2016 (oral presentation).

17. Karas P., **Perruchon C**., Karanasios E., Papadopoulou E.S., Ehaliotis C., Karpouzas D.G., 2016 Integrated biodepuration of pesticide-contaminated wastewaters from the fruit-packaging industry: Bioaugmentation, risk assessment and optimized management. 6th European Biobeds Workshop, Great Dunmow, UK, 27-29 September 2016.

18. **Perruchon C**., Pantoleon A., Veroutis D., Gallego-Blanco S., Martin-Laurent F., Liadaki K., Karpouzas D. G., 2017. Characterization of the degradation, mineralization and

detoxification capacity of a bacterial consortium able to degrade the fungicide thiabendazole. 7th Symposium of the Society of Mikrobiokosmos, Athens, Greece, 7-9 April 2017 (poster).

19. **Perruchon C**., Vasileiadis S., Papadopoulou E. S., Chatzinotas A., Omirou M., Gallego-Blanco S., Martin-Laurent F., Karpouzas D. G., 2017. The degradation of thiabendazole by a proteobacterial consortium: the key role of a *Sphingomonas* member identified via SIP and meta-omic analysis. 7th Conference on Pesticide Behaviour in Soils, Water and Air, York, GBR, 30 August- 1 September 2017 (poster).
20. **Perruchon C**., Baguelin C., Tourna M., Rousidou C., Vasileiadis S., Storck V., Martin-Laurent F., Karpouzas D. G., 2018. Functional metagenomic analysis of biobed systems: an invaluable source of genes for the degradation of pesticides. 17th International Symposium on Microbial Ecology (ISME), Leipzig, Germany, 12-17 August 2018 (poster).
21. Vasileiadis S., **Perruchon C**., Omirou M., Steinbach N., Chatzinotas A., Karpouzas D. G. , 2018. Interactomics of the degradation of a recalcitrant pesticide by a soil-enriched bacterial consortium. 17th International Symposium on Microbial Ecology (ISME), Leipzig, Germany, 12-17 August 2018 (poster).
22. Vasileiadis S., **Perruchon C**., Omirou M., Scheer B., Adrian L., Steinbach N., Chatzinotas A., Karpouzas D. G., 2018. Elucidating the roles and interactions of the members of a bacterial consortium along the degradation of the recalcitrant fungicide thiabendazole via a multi-omic approach. 11th Hellenic Bioinformatics Conference, Thessaloniki, Greece, 16-18 November 2018 (poster).
23. **Perruchon C**., Baguelin C., Tourna M., Rousidou C., Vasileiadis S., Storck V., Martin-Laurent F., Karpouzas D. G., 2019. Functional metagenomic analysis of biobed systems: an invaluable source of genes for the degradation of pesticides. 8th Symposium of the Society of Mikrobiokosmos, Patra, Greece, 18-20 April 2019 (poster).
24. Vasileiadis S., **Perruchon C.,** Omirou M., Scheer B., Adrian L., Steinbach N., Agüera A., Chatzinotas A., Karpouzas D. G., 2019. Roles and interactions of the members of a bacterial consortium along the degradation of the recalcitrant fungicide thiabendazole revealed via multi-omic approach. 8th Symposium of the Society of Mikrobiokosmos, Patra, Greece, 18-20 April 2019 (poster).
25. Papazlatani C., **Perruchon C**., Katsoula A., Lagos S., Papadopoulou E. S., Vasileiadis S., Karas P. A., Karpouzas D. G., 2019. Isolating bacteria able to rapidly degrade fungicides used in fruit packaging industry: Tailored made inocula for the treatment of relevant agro-industrial effluents. 8th Symposium of the Society of Mikrobiokosmos, Patra, Greece, 18-20 April 2019 (poster).