

Dr. Papapostolou Kyriaki Maria



📍 Andrea Papandreou Avenue 37, Heraklion Crete, Greece
Postal code: 71305

☎ (+30) 6981848791

✉ kyriaki_papapostolou@imbb.forth.gr

ORCID: <https://orcid.org/0000-0002-5615-4514>

Sex: Female | Date of Birth: 29/01/1992 | Nationality: Greek

Mother language: Greek | Other languages: English (C1)

Education/Working Experience

- Feb 2022-present** **Postdoctoral Research Associate**, Institute of Molecular Biology and Biotechnology (IMBB), Crete/ Molecular diagnostics
- Nov 2017-Feb 2022** **PhD**, Department of Biology, University of Crete, Greece. “Molecular characterization of pesticide resistance in *Bemisia tabaci* and *Tetranychus urticae* and the development of diagnostics”
- Oct 2017-Dec 2017** **Erasmus+ Traineeship**, Institute for Biodiversity and Ecosystem Dynamics (IBED) Science Park Amsterdam, The Netherlands. “Functional characterization of recombinant UGT detoxification proteins”
- 2015-2017** **Master of Science (MSc)**, Protein Biotechnology program (Excellent 9.41/10), Interdisciplinary program between the Department of Biology and the Department of Chemistry, University of Crete
- 2010-2015** **Bachelor of Science (BSc)**, Biochemistry and Biotechnology, (Very good, 6.8/10), Department of Biochemistry and Biotechnology, University of Thessaly

Laboratory experience

- Cloning, genetic strategy design for transgenic lines
- Cultivation of bacterial cells and cell transformation techniques
- Cloned gene expression in *E. coli* IPTG-inducible promoters
- Protein purification and implementation of chemical and biochemical methods of analysis
- Kinetic analysis methods

- Enzymatic activity assays
- Protein crystallization methods (batch, vapour-diffusion, bulk)
- Protein expression and purification techniques in bacteria cells.
- Protein manipulations (SDS-PAGE, Western immunoblotting)
- DNA (PCR, Colony PCR, ddPCR, DNA extraction) & RNA (qPCR, dsRNA synthesis, RNA extraction) manipulations
- Molecular diagnostics (experiment design and implementation)
- Genome editing using the CRISPR/Cas-9 system (experiment design and implementation)
- RNAi (experiment design and implementation)
- Validation of expression levels of detoxification enzymes (P450s, GSTs, UGTs, CCEs, ABC transporters)
- Cultivation of different pests (*T. urticae*, *B. tabaci*, *D. melanogaster*, mosquito species, *M. persicae*, *T. absoluta*, *T. vaporariorum*)
- Toxicity assays in different pests using pesticides

Additional Information

Publications

Douris, V., **Papapostolou, K.-M.**, Ilias, A., Roditakis, E., Kounadi, S., Riga, M., Nauen, R., Vontas, J., 2017. Investigation of the contribution of RyR target-site mutations in diamide resistance by CRISPR/Cas9 genome modification in *Drosophila*. *Insect Biochemistry and Molecular Biology* 87, 127–135. <https://doi.org/10.1016/j.ibmb.2017.06.013>

Singh, K.S., Troczka, B.J., Duarte, A., Balabanidou, V., Trissi, N., Carabajal Paladino, L.Z., Nguyen, P., Zimmer, C.T., **Papapostolou, K.M.**, Randall, E., Lueke, B., Marec, F., Mazzoni, E., Williamson, M.S., Hayward, A., Nauen, R., Vontas, J., Bass, C., 2020. The genetic architecture of a host shift: An adaptive walk protected an aphid and its endosymbiont from plant chemical defenses. *Science Advances* 6, eaba1070. <https://doi.org/10.1126/sciadv.aba1070>

Lueke, B., Douris, V., Hopkinson, J.E., Maiwald, F., Hertlein, G., **Papapostolou, K.-M.**, Bielza, P., Tsagkarakou, A., Van Leeuwen, T., Bass, C., Vontas, J., Nauen, R., 2020. Identification and functional characterization of a novel acetyl-CoA carboxylase mutation associated with ketoenol resistance in *Bemisia tabaci*. *Pesticide Biochemistry and Physiology* 166, 104583. <https://doi.org/10.1016/j.pestbp.2020.104583>

Papapostolou, K.M., Riga, M., Charamis, J., Skoufa, E., Souchlas, V., Ilias, A., Dermauw, W., Ioannidis, P., Van Leeuwen, T., Vontas, J., 2021. Identification and characterization of striking multiple-insecticide resistance in a *Tetranychus urticae* field population from Greece. *Pest Management Science* 77, 666–676. <https://doi.org/10.1002/ps.6136>

Xue, W., Mermans, C., **Papapostolou, K.-M.**, Lamprousi, M., Christou, I.-K., Inak, E., Douris, V., Vontas, J., Dermauw, W., Leeuwen, T.V., 2021. Untangling a Gordian knot: the role of a GluCl3 I321T mutation in abamectin resistance in *Tetranychus urticae*. *Pest Management Science* 77, 1581–1593. <https://doi.org/10.1002/ps.6215>

Mavridis, K., **Papapostolou, K.M.**, Riga, M., Ilias, A., Michaelidou, K., Bass, C., Van Leeuwen, T., Tsagkarakou, A., Vontas, J., 2021. Multiple TaqMan qPCR and droplet digital PCR (ddPCR) diagnostics for pesticide resistance monitoring and management, in the major agricultural pest *Tetranychus urticae*. *Pest Management Science* 2021. <https://doi.org/10.1002/ps.6632>

Papapostolou, K.M., Riga, M., Samantsidis, G.-R., Skoufa, E., Balabanidou, V., Van Leeuwen, T., Vontas, J., 2022. Over-expression in cis of the midgut P450 CYP392A16 contributes to abamectin resistance in *Tetranychus urticae*. *Insect Biochemistry and Molecular Biology* 103709. <https://doi.org/10.1016/j.ibmb.2021.103709>

Mavridis, K., **Papapostolou, K.**, Ilias, A., Michaelidou, K., Stavrakaki, M., Roditakis, E., Tsagkarakou, A., Bass, C. and Vontas, J., 2022. Next-generation molecular diagnostics (TaqMan qPCR and ddPCR) for monitoring insecticide resistance in *Bemisia tabaci*. *Pest Management Science*. <https://doi.org/10.1002/ps.7122>

Kala-Chouakeu, N.A., Kopya, E., Balabanidou, V., Djiappi, B.T., **Papapostolou, K.M.**, Tchuinkam, T., Antonio-Nkondjio, C., 2022. DDT Resistance in *Anopheles pharoensis* from Northern Cameroon Associated with High Cuticular Hydrocarbon Production. *Genes* 13, 1723. <https://doi.org/10.3390/genes13101723>

Conferences

V. DOURIS, M. RIGA, A. ILIAS, R. PANTELERI, I.K. CHRISTOU, S. KOUNADI, **K.M. PAPAPOSTOLOU**, G.R. SAMANTSIDIS, M. KEFI, T. VAN LEEUWEN, R. NAUEN and J. VONTAS Investigation of the contribution of different molecular mechanisms to insecticide resistance through gene overexpression and targeted genome modification in *Drosophila*. 17th Panhellenic Entomological Congress, Agricultural University of Athens, Athens, Greece, 18-22 September 2017

Nauen R, Hertlein G, Lueke B, Maiwald F, Bielza P, Douris V, **Papapostolou KM**, Vontas J. (2018) Mechanisms of insecticide resistance in *Bemisia tabaci* with special reference to acetyl-CoA carboxylase inhibitors. XI European Congress of Entomology (ECE2018), 2-6 July, Naples, Italy.

Douris V, **Papapostolou KM**, Samantsidis GR, Panteleri R, Christou IK, Riga M, Nauen R, Van Leeuwen T, Vontas J. (2018) Dissecting insecticide resistance via genetic manipulation and genome modification in *Drosophila*. XI European Congress of Entomology (ECE2018), 2-6 July, Naples, Italy.

Riga M., **Papapostolou K.M.**, Skoufa E., Tsakireli D., Bajda S., Ilias A., Douris V., Dermauw W., Van Leeuwen T., Vontas J. Genetic, molecular and functional characterization of acaricide resistance in *Tetranychus urticae*. 14th International IUPAC Congress, Ghent, Belgium, 2019.

Papapostolou KM, Panteleri R, Lamprousi M, Van Leeuwen T, Nauen R, Douris V and Vontas J. (2019) Dissecting insecticide resistance via genome modification in *Drosophila*. Resistance, 16-18 September 2019, Rothamsted, UK.

Chemical Biology of Disease Conference at Foundation for Research & Technology Hellas (FORTH), Heraklion, Greece, 15-18 September 2017

Scholarships

Apr 2019-Apr 2021 Greek State Foundation Scholarship co-financed by Greece and the European Union (European Social Fund- ESF) through the Operational Programme «Human Resources Development, Education and Lifelong Learning» in the context of the project “Strengthening Human Resources Research Potential via Doctorate Research” (MIS-5000432), implemented by the State Scholarships Foundation (IKY).

Aug 2017-Dec 2017 Erasmus plus EU-funded Scholarship 2017-2018, for a three-month traineeship in the Institute for Biodiversity and Ecosystem Dynamics (IBED) Science Park Amsterdam, The Netherlands

Personal Interests Horse Riding, Board Games, Functional training