

Curriculum vitae

First name: Dimitra

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Education

- Bachelor in Biology, Direction: Genetics, Cellular-Molecular Biology and Physiology, Faculty of Sciences, University of Patras, (2003-2009)
- Master degree in Protein Biotechnology, University of Crete, (2009-2011).
- PhD candidate in Agricultural University of Athens with the proposed title: "Functional analysis of insecticide resistance mechanisms in crop pests, with emphasis on cytochrome oxidases (cytochrome P450s)", (03/2021)

Languages

- Greek-Excellent level
- English-very good level (First Certificate in English)
- German-Basic level (Zertifikat Deutsch)

Other skills: Driver's license holder, MS Office, Photoshop, Sigma Plot, SPSS

Laboratory Management 2013 till today: Responsible for the supply of consumables, laboratory equipment, tenders, notices, project assignments

Lab skills: HPLC analyst, cloning, expression and purification of recombinant proteins, ion exchange and Ni-NTA chromatography, PCR, qPCR, cultures of insect and mammalian cells, transfections, Baculovirus expression, enzyme kinetics, ELISA, SDS-PAGE, Western blotting, management of *Anopheles gambiae* population.

Research Experience - Participation in research projects:

A/A	Financing	Title	Time period	Position	Scientific director
1	Prefecture of Crete	Smart diagnostic tools and database to support precision plant protection in horticultural crops of Crete- SmartPP	01-03-2019 till today	Research staff	Jonh Vontas
2	HSR Technology	Upgrading of plant wealth- PlantUp	01-05-2018 till 29-02-2019	Research staff	Kalandidis Kritonas
3	Bayer CropScience AG	Genetic and Functional Characterization of insecticide resistance mechanisms	01-08-2017 till 30-04-2018	Research staff	Jonh Vontas
4	Peloponnisos	Scientific support for the mosquito control program in Peloponnesus Greece	03-10-2016 till 30-06-2017	Research staff	Jonh Vontas
5	HSR Technology	Genetic and functional analysis of <i>B.TABACI</i> and <i>N.LUGEN'S</i> insect resistance mechanisms	15/03/2016 till 31/07/2017	Research staff	Jonh Vontas
6	HSR Technology (Thales)	Genomic and functional approaches for understanding insecticide resistance mechanisms in major agricultural pests	01/01/13- 31/03/13 01/01/14 - 30/09/2015 02/05/15 - 05/12/15	Research staff	Jonh Vontas
7	IVCC	Optimizing AChE-based assays for carbamates and organophosphates insecticides detection	01/05/2013 till 01/05/2015	Research staff	Mark Paine
18	HSR Technology	Molecular and functional approach for understanding cytochrome P450-based detoxification mechanisms in <i>Tetranychus urticae</i>	05/11/2012 till 31/12/2012 01/03/2012 till 30/04/2012	Research staff	Jonh Vontas

Publications

1. Seyedeh Masoumeh Fotoukiai, Nicky Wybouw, Andre H. Kurlovs, **Dimitra Tsakireli**, Spiros A. Pergantis, Richard M. Clark, John Vontas, Thomas Van Leeuwen. (2021) High-resolution genetic mapping reveals cis-regulatory and copy number variation in loci associated with cytochrome P450-mediated detoxification in a generalist arthropod pest. PLOS GENETICS. 2021 Jun 21;17(6): e1009422. doi: 10.1371/journal.pgen.1009422. PMID: 34153029; PMCID: PMC8248744.

2. **Tsakireli D**, Riga M, Kounadi S, Douris V, Vontas J. (2019) Functional characterization of CYP6A51, a cytochrome P450 associated with pyrethroid resistance in the Mediterranean fruit

fly *Ceratitis capitata*. **Pest Biochem Physiol.** 157:196-203. [DOI:10.1016/j.pestbp.2019.03.022](https://doi.org/10.1016/j.pestbp.2019.03.022). PMID:31153469

3. Vontas J, Grigoraki L, Morgan J, **Tsakireli D**, Fuseini G, Segura L, Niemczura de Carvahlo J, Nguema R, Weetman D, Slotman MA, Hemingway J. (2018) Rapid selection of a pyrethroid metabolic enzyme CYP9K1 by operational malaria control activities. **PNAS.** 115(18):4619-4624. [DOI:10.1073/pnas.1719663115](https://doi.org/10.1073/pnas.1719663115). PMID:29674455
4. Kapantaidaki DE, Sadikoglou E, **Tsakireli D**, Kampanis V, Stavrakaki M, Schorn C, Ilias A, Riga M, Tsiamis G, Nauen R, Skavdis G, Vontas J, Tsagkarakou A (2017) Insecticide resistance in *Trialeurodes vaporariorum* populations and novel diagnostics for kdr mutations. **Pest Manag Sci.** 2017 Jul 22. [doi: 10.1002/ps.4674](https://doi.org/10.1002/ps.4674)
5. Nena Pavlidi, Mousaalreza Khalighi, Antonis Myridakis, Wannes Dermauw, Nicky Wybouw, **Dimitra Tsakireli**, Euripides G. Stephanou, Nikolaos E. Labrou, John Vontas, Thomas Van Leeuwen (2016) A glutathione-S-transferase (TuGSTd05) associated with acaricide resistance in *Tetranychus urticae* directly metabolizes the complex II inhibitor cyflumetofen, **Insect Biochem Mol Biol.** 2017 Jan; 80:101-115. [doi: 10.1016/j.ibmb.2016.12.003](https://doi.org/10.1016/j.ibmb.2016.12.003). Epub 2016 Dec 5.
6. Riga M, Myridakis A, **Tsakireli D**, Morou E, Stephanou EG, Nauen R, Van Leeuwen T, Douris V, Vontas J. (2015) Functional characterization of the *Tetranychus urticae* CYP392A11, a cytochrome P450 that hydroxylates the METI acaricides cyenopyrafen and fenpyroximate. **Insect Biochem Mol Biol.** 65:91-99. [DOI:10.1016/j.ibmb.2015.09.004](https://doi.org/10.1016/j.ibmb.2015.09.004). PMID:26363294
7. Nauen R, Wölfel K, Lueke B, Myridakis A, **Tsakireli D**, Roditakis E, Tsagkarakou A, Stephanou E, Vontas J. (2015). Development of a lateral flow test to detect metabolic resistance in *Bemisia tabaci* mediated by CYP6CM1, a cytochrome P450 with broad spectrum catalytic efficiency. **Pestic Biochem Physiol.** 121:3-11. [DOI: 10.1016/j.pestbp.2014.12.023](https://doi.org/10.1016/j.pestbp.2014.12.023). PMID:26047106
8. Riga M, **Tsakireli D**, Ilias A, Morou E, Myridakis A, Stephanou EG, Nauen R, Dermauw W, Van Leeuwen T, Paine M, Vontas J. (2014) Abamectin is metabolized by CYP392A16, a cytochrome P450 associated with high levels of acaricide resistance in *Tetranychus urticae*. **Insect Biochem Mol Biol.** 46:43-53. [DOI:10.1016/j.ibmb.2014.01.006](https://doi.org/10.1016/j.ibmb.2014.01.006). PMID:24463358
9. Demaeght P, Dermauw W, **Tsakireli D**, Khajehali J, Nauen R, Tirry L, Vontas J, Lümme P, Van Leeuwen T. (2013) Molecular analysis of resistance to acaricidal spirocyclic tetrone acids in *Tetranychus urticae*: CYP392E10 metabolizes spirodiclofen, but not its corresponding enol. **Insect Biochem Mol Biol.** 43(6):544-554. [DOI:10.1016/j.ibmb.2013.03.007](https://doi.org/10.1016/j.ibmb.2013.03.007). PMID:23523619
10. Morou E, M Riga, **D Tsakireli**, A Ilias, E Sioziou, N Pavlidi, R Nauen, K Kalantidis, T Van Leeuwen, MJ Paine, and J Vontas (2013) Molecular and functional approaches for understanding cytochrome P450-based detoxification mechanisms in insect pests. **Febs Journal** 280: 588-588.

Conferences Announcements

1. Ilias A, Riga M, Papapostolou KM, Skoufa E, **Tsakireli D**, Badja S, Douris V, Balabanidou V, Vorgia E, Dermauw W, Van Leeuwen T, Vontas J. Genetics, molecular and functional characterization of insecticide / acaricide resistance in *Tetranychus urticae* (abstract & poster), [16-18 September 2019, Rothamsted, UK](#), Resistance '19
2. Morou E, Ilias A, Pitsili E, **Tsakireli D**, Moustaka J, Tsagkarakou A, Vontas J. Biochemical analysis of neonicotinoid resistance in *Bemisia tabaci*, prediction of cross resistance and development of diagnostics (poster), 20-23 Oct **2015**, Heraklion, Crete Greece, 16th Panhellenic Entomological Congress (PEC)
3. Vontas J, Riga M, **Tsakireli D**, Morou E, Pavlidi N, Myridakis A, Van Leeuwen T, Roditakis E, Tsagkarakou A, Nauen R. Molecular analysis of insecticide resistance in major agricultural pests: from mechanisms to resistance management (oral), 20-23 Oct **2015**, Heraklion, Crete Greece, 16th Panhellenic Entomological Congress (PEC)
4. Riga M, Morou E, **Tsakireli D**, Ilias A, Christou IK, Nauen R, Dermauw W, Van Leeuwen T, Douris V, Vontas J. Functional analysis of cytochrome P450-based detoxification mechanisms in *Tetranychus urticae* (abstract), . XIV International Congress of Acarology, Kyoto, Japan, 14-18 July **2014**.
5. Riga M, Morou E, **Tsakireli D**, Ilias A, Tsagkarakou A, Siozou E, Douris V, Kalantidis K, Vontas J. Molecular and functional analysis of detoxification mechanisms of two spotted spider mite *Tetranychus urticae* (*Acari: Tetranychidae*) (abstract & poster), 22-25 Oct **2013** Kavala, Greece, 15th Panhellenic Entomological Congress (PEC)
6. Morou E, Riga M, **Tsakireli D**, Ilias A, Siozou E, Pavlidi N, Nauen R, Kalantidis K, Van Leeuwen T, Paine M & Vontas J. Molecular and functional approaches for understanding cytochrome P450-based detoxification mechanisms in insects and mites. FEBS Congress 6-11 July **2013**, St. Petersburg, Russia (poster).
7. Vontas J, Balabanidou V, Morou E, Riga M, **Tsakireli D**, Pavlidi N. Modern biotechnology for improving insecticide-based control of insects, 9-11 Nov **2012** Heraklion, Crete, 63rd Panhellenic Conference of the Hellenic Society of Biochemistry (PCHSB)
8. **Tsakireli D**, Morou E, Balabanidou V, Kokkinidis M, Vontas J. Functional and structural characterization of protein associated with insecticide resistance (paper & oral), 1 June **2011**, Heraklion, Crete Greece, Summer School of Protein Biotechnology, Department of Biology University of Crete

Teaching

12/2012 till present: Auxiliary teaching project at the Laboratory of Green Biotechnology of the Department of Biology - Laboratory Exercise Professor Vontas John: Modern Diagnostic Methods for Assessing the Resistance of Insecticides to Insecticides for the Rational Management of Chemical Fighting.

2016- Present: Teaching University Biology courses - Genetic Medicine, Biochemistry I, Biochemistry II in the DP studies School.

10/2016 to 06/2017: Teaching of Biology courses of high school in the 3rd Municipal Department of the Municipality of Heraklion.

02/2010 - 06/2011: Teaching at the 1st IEK of Heraklion in the course Organic Materials Maintenance.

10 / 2010- 02/2011: Auxiliary teaching project at the Inorganic Chemistry Laboratory of the Department of Biology.

2009-2010: Teaching Biology in High School in Secondary Education School.

Other Working experience

10/2009 till 02/2010: Sales department in CRETAPURE Company

11/2008 till 09/2009: Sales department in Cosmote Company

Personal interests: Bicycling, Books, Poetry, Theatrical group, Cinema, Travel

Recommendations: Available on request