
BIOGRAPHICAL SKETCH

NAME: Dimitra Toubanaki

POSITION TITLE: Postdoctoral Research Associate

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
University of Patras, Patras, Greece	B.Sc.	12/2003	Chemistry
University of Patras, Patras, Greece	Ph.D.	03/2008	Analytical Chemistry
Tufts University, MA, USA	Post-doc	09/2009	Single Cell Analysis
Hellenic Industrial Property Academy	Trainee	03/2022	Industrial Property

A. Personal Statement

After completing my PhD studies in Analytical Chemistry, I joined Tufts University (USA) to perform post-doctoral research on single cell analysis under the mentorship of Prof. David Walt. My work was focused on microfluidics development for single cell analysis with a pioneering approach. Due to family reasons, in 2009 I returned to Greece and worked in NKUA as EU-funded post-doctoral researcher studying nanoparticles toxicity. In 2012, I was awarded a highly competitive grant for independent research as a post-doctoral PI in collaboration with Dr Karagouni in Hellenic Pasteur Institute (HPI), focusing on novel biosensors development for virus detection. In 2017, I moved to private sector to work as R&D director in aquaculture industry, while I returned to academia in 2019, focusing on molecular tools development, based on -omics approaches. My academic training and research experience have provided me with an excellent background in multiple disciplines including chemical sciences, molecular biology, microbiology, genetics, materials science, bioinformatics and immunology. As a post-doctoral researcher, I moved to two independent laboratories based on an international university (USA), and a research institute (HPI), with three different research subjects, which strengthened the interdisciplinary approach of my research. During my staying at each lab, I was involved in the individual activities of each researcher, gaining valuable know-how and experience, but at the same time I conducted independent research (corresponding author in 10 research articles) and consolidated the technology of making point-of-care biosensors, both in Tufts University and HPI. I managed to obtain independent funding in the context of my postdoctoral research and properly equip the Laboratory of Cell Immunology of HPI for the new biosensor manufacturing activity. My main research interests are currently evolved around two axes: (i) utilization of high-throughput technologies for viral disease immunopathology elucidation and biomarkers identification, and (ii) novel molecular tools (e.g. PCR-arrays, biosensors) and methodologies development for point-of-care/on site virus detection. Currently, we are focusing on aquaculture threatening pathogens due to their great economic and environmental implications.

B. Positions and Honors

Positions and Employment

09/2008 - 09/2009: Postdoctoral Researcher, Dept of Chemistry, Tufts University, MA, USA

10/2009 - 10/2010: Postdoctoral Researcher, School of Medicine, National and Kapodistrian University of Athens

03/2012 - 09/2015: Postdoctoral Researcher, Immunology of Infection Group, Dept of Microbiology, HPI

09/2017 - 07/2018: R&D Director, AquaVet SA, Greece

01/2019 - date: Postdoctoral Researcher, Immunology of Infection Group, Dept of Microbiology, HPI

Honors and Awards

2012 - 2015: Competitive fellowship for conducting post-doctoral research, GSRT

2015: 1st award for poster presentation, 37th Scientific Conference of the Hellenic Association for Biological Sciences, Volos, Greece

2020: The research article 'Development of a Nanoparticle-based Lateral Flow Strip Biosensor for Visual Detection of Whole Nervous Necrosis Virus Particles' was included in the Top 100 in Chemistry papers for Scientific Reports in 2020.

Other Professional Activities – Memberships

- Member: Association of Greek Chemists (2004-date), Hellenic Association for Biological Sciences (2014-date), Hellenic Society for Biochemistry and Molecular Biology (2019-date), Hellenic Scientific Society of Unified Health (2020-date), American Chemical Society (2020-date).

- Peer reviewer for international journals (28 journals) (Biosensors and Bioelectronics, Analytical Chemistry, Talanta, International Journal of Nanomedicine, Microchimica Acta, Frontiers in Microbiology, Biosensors, Viruses, Biomolecules, Biotechnology and Bioengineering, ACS Infectious Disease, Molecules, Frontiers in Chemistry, etc).

Organization of Scientific Meetings– Educational activities

- Member of the Organizing Committee of the 8th Forum of Young Scientists of the Hellenic Society of Biochemistry and Molecular Biology, November 28, 2019, Eugenides Foundation, Athens.

- Member of the Organizing Committee of Young Pasteur Institute (YouPI) Scientists, 2022, HPI, Athens.

- Lectures on novel diagnostic methods in the MSc Program in «Biomedical Methods and Technology in Diagnosis» organized by the Department of Biomedical Sciences of the University of West Attica (2018-2019).

- Howard Hughes Medical Institute Undergraduate Mentor: Microarrays: Experimental Design, Data Processing, and Information Generation, Tufts University, Medford, MA, USA (2008-2009).

- Science communication actions: Kastellorizo Puzzle Festival (2021), Researchers Night (2020, 2019), Athens Science Festival (2019), Patras Science Festival (2019), Howard Hughes Medical Institute (HHMI) Undergraduate Mentor (2008-2009).

C. Contribution to Science

24 scientific publications (18 original research articles in refereed international journals, 1 review, 5 meeting abstracts), distributed as follows: 7 publications in Q1, 8 publications in Q2, 3 publications in Q3. Citations > 280 (up to 4/2022). H-index: 10 (up to 6/2022). 59 oral/ poster presentations in national and international conferences.

Complete list of publications: <https://www.webofscience.com/wos/woscc/summary/cefae1c3-f8ca-496d-b450-33102d3c1e4b-228c7fd4/relevance/1>; <https://orcid.org/0000-0003-2250-3250>

D. Additional Information: Research support

- Development of lateral flow biosensors for virus, antibodies and nucleic acids detection, as a complete analysis system for environmental-threatening viruses: application on fish nervous necrosis virus (NNV) as a model system (LS9-448), NSFR 2007-2013, Funding: 150 000 €, 03/2012-06/2015, Role: PI