

PERSONAL INFORMATION

SURNAME: KOTSAKIS

NAME: STATHIS

DATE OF BIRTH: 15-01-1982

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EDUCATION

- 07.2010 - 07.2014** Medical School, Department of Microbiology, University of Thessaly. Thesis: "Mechanisms implicated in the expansion of substrate spectra of class A and C beta-lactamases", **PhD**
- 10.2004 - 10.2008** Biology Department, University of Athens, Thesis (Laboratory of Microbiology): "Development of fluorescence in situ hybridization methods for detection of Bacteria in environmental samples", **MSc Microbial Biotechnology**
- 09.1999 - 10.2004** Biology Department, University of Athens, Thesis (Laboratory of Animal and Human Physiology): "Effects of heavy metals, hyperthermia and hypothermia on activation of MAP kinases in the tissues of *Mytilus galloprovincialis*", **BSc Biology**

POSITIONS

- 07.2021 – TODAY*** **Principal Investigator (Researcher B).** Bacteriology – Antimicrobial Resistance Laboratory of Bacteriology, Hellenic Pasteur Institute (HPI), Athens Greece
- 11.2017 – 07.2021*** **Commissioned researcher (Researcher C).** Bacteriology – Antimicrobial Resistance Laboratory of Bacteriology, HPI, Athens Greece
- 04.2017 - 10.2017** **Post-doctoral researcher**
Laboratory of Bacteriology, HPI, Athens Greece
- 04.2016 - 03.2017** **Post-doctoral researcher**
Center for Antibiotic Resistance Research, University of Gothenburg, Sweden
- 01.2016 - 03.2016** **Post-doctoral researcher**
Laboratory of Bacteriology, HPI, Athens Greece
- 09.2005 - 03.2016** **Molecular Biology and Microbiology Applications Specialist**
Pavlos Arnaoutis SA, Athens Greece
- 06.2008 - 05.2014** **Pre-doctoral researcher**
Laboratory of Bacteriology, HPI, Athens Greece

*Independent researcher positions

TRAINING ACTIVITIES

- Doctoral Theses 1 Supervisor, 3 Member of the research team
- Master Theses 1 Supervisor
- Undergraduate Theses 4 Supervisor

GROUP COMPOSITION

Anastasia Lampropoulou, Biologist, MSc. PhD Student

(Biology Department, University of Athens)

Stavros Selemidis, Biology Student

(Biology Department, University of Athens)

Konstantinos Koulis, Biology Student

(Biology Department, University of Athens)

Anastasia Pavlidi, Biotechnology Student

(Biotechnology Department, Agricultural University of Athens)

CURRENT RESEARCH PROJECTS

- i) Functional characterization of novel beta-lactamases. Enzymology and structural analyses.
- ii) Studies on the environmental dimension of microbial resistance to beta-lactams.
- iii) Evaluation and development of novel antibiotics and beta-lactamase inhibitors.
- iv) Characterization of novel genetic elements carrying resistance genes – genome analyses of resistant strains.
- v) Evaluation and development of novel methodologies for the detection of carbapenemase producing bacteria.

PATENTS

2020 YANNAKOPOULOU K., AGNES M., MIRIAGOU V., KOTSAKIS S-A, MILIOTIS G. Iminodiacetic acid substituted cyclodextrins as potentiators of beta-lactam antibiotics. European Patent Office, EP3714904A1.

FUNDING – PARTICIPATION IN RESEARCH GRANTS

2020 - 2023 Evolution of structure-function relationships in metallo-beta-lactamases. Institut Pasteur Hellenique/NOSTOS FOUNDATION – PhD scholarships. Total funding: 35,000 €. Principal Investigator

2020 In vitro antibacterial activity of novel antibiotic formulations. ANFARM HELLAS SA. Total funding: 10,351 €. Principal Investigator.

2014 - 2023 Participation in 9 National and International Research Grants

PROFFESIONAL ACTIVITIES, MEMBERSHIPS & REVIEWING ACTIVITIES

2021 - 2025 Member of the Public Health Expert Committee (EEDY) of the Greek Ministry of Health.

2020 - Review Editor in Frontiers in Cellular and Infection Microbiology (2021 -)

Reviewer for the following journals:

FEMS Microbiology Ecology (Oxford Academic), Journal of Medical Microbiology (Microbiology Society), Advanced Biosystems (Wiley), Environmental Pollution (Elsevier), European Journal of Clinical Microbiology & Infectious Diseases (Springer), Clinical Microbiology and Infection (Elsevier), Journal of Antimicrobial Chemotherapy (Oxford Academic), Future Microbiology (Future Medicine), Journal of Global Antimicrobial Resistance (Elsevier), Peptides (Elsevier), Microbial Drug Resistance (Mary Ann Liebert, Inc), Annals of Clinical Microbiology and Antimicrobials (BMC), Journal of Clinical Medicine (MDPI)

BIBLIOGRAPHY

An up-to-date list of published articles can be found at the following URL address:

NCBI-PubMed

<https://pubmed.ncbi.nlm.nih.gov/?term=kotsakis%20s.d.%20or%20kotsakis%20s.%20or%20kotsakis%20stathis%20or%20kotsakis%20efstathios&sort=pubdate>

Publication metrics

Total articles: 33

First author: 12

Corresponding author: 4

697 citations, h-index 17. Source: SCOPUS 05/2023

<https://www.scopus.com/authid/detail.uri?authorId=26422275900>

Publication list 2013 – (n=21)

1. **Kotsakis SD***, Lambropoulou A, Miliotis G, Tzelepi E, Miriagou V, Tzouvelekis LS. Direct colorimetry of imipenem decomposition as a novel cost-effective method for detecting carbapenemase-producing enterobacteria (2022) *Microbiology Spectrum* 10(4):e0093822. doi: <https://journals.asm.org/doi/10.1128/spectrum.00938-22> [IF: 9.043]
2. **Kakkanas, A. Karamichali, E. Koufogeorgou, E.I. Kotsakis, S.D. Georgopoulou, U. Foka, P.** Targeting the YXX Φ Motifs of the SARS Coronaviruses 1 and 2 ORF3a Peptides by In Silico Analysis to Predict Novel Virus—Host Interactions. (2022) *Biomolecules* 12, 1052. <https://doi.org/10.3390/biom12081052> [IF: 4.569]
3. **Kotsakis SD***, Miliotis G, Tzelepi E., Tzouvelekis LS, Miriagou V. Detection of carbapenemase producing enterobacteria using an ion sensitive field effect transistor sensor (2021) *Scientific Reports* 11(1): 12061 doi: <https://doi.org/10.1038/s41598-021-91202-6> [IF: 4.379]
4. **Voulgari E, Kotsakis SD, Giannopoulou P, Perivolioti E, Tzouvelekis LS, Miriagou V.** Detection in two hospitals of transferable ceftazidime-avibactam resistance in *Klebsiella pneumoniae* due to a novel VEB beta-lactamase variant with a Lys234Arg substitution, Greece, 2019 (2020) *Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin* 25(2) doi: <https://dx.doi.org/10.2807/1560-7917.ES.2020.25.2.1900766> [IF: 6.307]
5. **Leiros HS, Thomassen AM, Samuelsen O, Flach CF, Kotsakis SD, Larsson DGJ.** Structural insights into the enhanced carbapenemase efficiency of OXA-655 compared to OXA-10 (2020) *FEBS open bio* 10(9):1821-1832 doi: <https://dx.doi.org/10.1002/2211-5463.12935> [IF: 2.231]
6. **Frohlich C, Sorum V, Huber S, Samuelsen O, Berglund F, Kristiansson E, Kotsakis SD, Marathe NP, Larsson DGJ, Leiros HS.** Structural and biochemical characterization of the environmental MBLs MYO-1, ECV-1 and SHD-1 (2020) *The Journal of antimicrobial chemotherapy* doi: <https://dx.doi.org/10.1093/jac/dkaa175> [IF: 5.217]
7. **Agallou M, Margaroni M, Kotsakis SD, Karagouni E.** A Canine-Directed Chimeric Multi-Epitope Vaccine Induced Protective Immune Responses in BALB/c Mice Infected with *Leishmania infantum* (2020) *Vaccines* 8(3) doi: <https://dx.doi.org/10.3390/vaccines8030350> [IF: 4.086]
8. **Kotsakis SD, Flach CF, Razavi M, Larsson DGJ.** Characterization of the First OXA-10 Natural Variant with Increased Carbapenemase Activity (2019) *Antimicrobial agents and chemotherapy* 63(1) doi: <https://dx.doi.org/10.1128/AAC.01817-18> [IF: 4.715]
9. **Marathe NP, Janzon A, Kotsakis SD, Flach CF, Razavi M, Berglund F, Kristiansson E, Larsson DGJ.** Functional metagenomics reveals a novel carbapenem-hydrolyzing mobile beta-lactamase from Indian river sediments contaminated with antibiotic production waste (2018) *Environment international* 112:279-286 doi: <https://dx.doi.org/10.1016/j.envint.2017.12.036> [IF: 7.577]
10. **Berglund F, Marathe NP, Osterlund T, Bengtsson-Palme J, Kotsakis S, Flach CF, Larsson DGJ, Kristiansson E.** Identification of 76 novel B1 metallo-beta-lactamases through large-scale screening of genomic and metagenomic data (2017) *Microbiome* 5(1):134 doi: <https://dx.doi.org/10.1186/s40168-017-0353-8> [IF: 11.607]
11. **Vourli S, Tsala M, Kotsakis S, Daikos GL, Tzouvelekis L, Miriagou V, Zerva L, Meletiadis J.** Comparison of Short Versus Prolonged Infusion of Standard Dose of Meropenem Against Carbapenemase-Producing *Klebsiella pneumoniae* Isolates in Different Patient Groups: A Pharmacokinetic-Pharmacodynamic Approach (2016) *Journal of pharmaceutical sciences* 105(4):1513-1518 doi: <https://dx.doi.org/10.1016/j.xphs.2016.02.008> [IF: 2.997]

12. **Tsala M, Vourli S, Kotsakis S, Daikos GL, Tzouvelekis L, Zerva L, Miriagou V, Meletiadis J.** Pharmacokinetic-pharmacodynamic modelling of meropenem against VIM-producing *Klebsiella pneumoniae* isolates: clinical implications (2016) *Journal of medical microbiology* 65(3):211-218 doi: <https://dx.doi.org/10.1099/jmm.0.000214> [IF: 2.156]
13. **Kotsakis SD*, Tzouvelekis LS, Lebessi E, Doudoulakakis A, Bouli T, Tzelepi E, Miriagou V.** Characterization of a mobilizable IncQ plasmid encoding cephalosporinase CMY-4 in *Escherichia coli* (2015) *Antimicrobial agents and chemotherapy* 59(5):2964-2966 doi: <https://dx.doi.org/10.1128/AAC.05017-14> [IF: 4.715]
14. **Kotsakis SD*, Miriagou V, Vetouli EE, Bozavoutoglou E, Lebessi E, Tzelepi E, Tzouvelekis LS.** Increased Hydrolysis of Oximino-beta-Lactams by CMY-107, a Tyr199Cys Mutant Form of CMY-2 Produced by *Escherichia coli*. *Antimicrobial agents and chemotherapy* 2015 59(12):7894-7898 doi: <https://dx.doi.org/10.1128/AAC.01793-15> [IF: 4.715]
15. **Papagiannitsis CC, Kotsakis SD, Tuma Z, Gniadkowski M, Miriagou V, Hrabak J.** Identification of CMY-2-type cephalosporinases in clinical isolates of Enterobacteriaceae by MALDI-TOF MS (2014) *Antimicrobial agents and chemotherapy* 58(5):2952-2957 doi: <https://dx.doi.org/10.1128/AAC.02418-13> [IF: 4.715]
16. **Tzouvelekis LS, Miriagou V, Kotsakis SD, Spyridopoulou K, Athanasiou E, Karagouni E, Tzelepi E, Daikos GL.** KPC-producing, multidrug-resistant *Klebsiella pneumoniae* sequence type 258 as a typical opportunistic pathogen (2013) *Antimicrobial agents and chemotherapy* 57(10):5144-5146 doi: <https://dx.doi.org/10.1128/AAC.01052-13> [IF: 4.715]
17. **Papagiannitsis CC, Giakkoupi P, Kotsakis SD, Tzelepi E, Tzouvelekis LS, Vatopoulos AC, Miriagou V.** OmpK35 and OmpK36 porin variants associated with specific sequence types of *Klebsiella pneumoniae* (2013) *Journal of chemotherapy* 25(4):250-254 doi: <https://dx.doi.org/10.1179/1973947813Y.0000000075> [IF: 1.288]
18. **Miriagou V, Tzelepi E, Kotsakis SD, Daikos GL, Bou Casals J, Tzouvelekis LS.** Combined disc methods for the detection of KPC- and/or VIM-positive *Klebsiella pneumoniae*: improving reliability for the double carbapenemase producers (2013) *Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases* 19(9):E412-415 doi: <https://dx.doi.org/10.1111/1469-0691.12238> [IF: 7.117]
19. **Kotsakis SD, Petinaki E, Scopes E, Siatravani E, Miriagou V, Tzelepi E.** Laboratory evaluation of Brilliance CRE Agar for screening carbapenem-resistant Enterobacteriaceae: Performance on a collection of characterised clinical isolates from Greece (2013) *Journal of global antimicrobial resistance* 1(2):85-90 doi: <https://dx.doi.org/10.1016/j.jgar.2013.03.004> [IF: 2.706]
20. **Kotsakis SD, Caselli E, Tzouvelekis LS, Petinaki E, Prati F, Miriagou V.** Interactions of oximino-substituted boronic acids and beta-lactams with the CMY-2-derived extended-spectrum cephalosporinases CMY-30 and CMY-42 (2013) *Antimicrobial agents and chemotherapy* 57(2):968-976 doi: <https://dx.doi.org/10.1128/AAC.01620-12> [IF: 4.715]
21. **Hachler H, Kotsakis SD, Tzouvelekis LS, Geser N, Lehner A, Miriagou V, Stephan R.** Characterisation of CTX-M-117, a Pro174Gln variant of CTX-M-15 extended-spectrum beta-lactamase, from a bovine *Escherichia coli* isolate (2013) *International journal of antimicrobial agents* 41(1):94-95 doi: <https://dx.doi.org/10.1016/j.ijantimicag.2012.09.011> [IF: 4.621]