Nikolaos Eleftheriadis

www.linkedin.com/in/nikolaos-eleftheriadis-7b7b1b12b

https://scholar.google.com/citations?user=SYmdOckAAAAJ&hl=en

https://orcid.org/0000-0002-1738-6419

: 27th October 1986 ☎ : 00306987521215 ✉ : n.eleftheriadis@uoc.gr

: Igoumenou Gavriil 16-18, 71305 Heraklion, Greece

Education

- **2012 – 2016** **PhD in Chemical Biology** (*cum laude*), University of Groningen, Groningen, The Netherlands
- **2010 – 2012** **MSc in Organic Chemistry** (*with honors*), Aristotle University of Thessaloniki, Thessaloniki, Greece
- **2004 – 2010** **BSc in Chemistry**, Aristotle University of Thessaloniki, Thessaloniki, Greece

Research Experience

- **09/2021 – now** **Assistant Professor in Biochemistry**, University of Crete, Chemistry Department, Greece. Research topic: "Drug design at the single molecule level"
- **04/2018 – 06/2021** **Postdoctoral researcher in Molecular Biophysics**, KU Leuven, Belgium
  Research project: "Define the structural dynamics of SecA and design potential antibiotics" ♦ Single-molecule Forster Resonance Energy Transfer (smFRET) ♦ Protein Expression, Purification and Labeling ♦ Drug Design
- **02/2017 – 04/2018** **Postdoctoral researcher in Biophysics**, University of Groningen, The Netherlands
  Research projects: "Define the structural dynamics of proteins from pathogenic bacteria using smFRET", "Design of a Protein-linker photostabilizer"
  ♦ smFRET ♦ Protein Labeling ♦ Organic Chemical Synthesis
- **January 2018** **Training Visit**: Labeling and smFRET experiments in PsaA and AdcA proteins
  Department of Physical and Synthetic Biology, Ludwig Maximilian University of Munich, Germany
- **12/2012 – 11/2016** **PhD Thesis**: "Inhibition and Detection of 15-lipoxygenase-1"
  ♦ Organic Chemical Synthesis ♦ Protein Expression and Purification ♦ Molecular Modeling ♦ Enzyme Inhibition/Kinetic Studies ♦ Activity-Based Protein Profiling
- **March 2015** **Training Visit**: Expression and purification of 5-lipoxygenase
  Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden
- **10/2010 – 09/2012** **MSc Thesis**: "Synthesis of quinoline, benzodiazepine and benzimidazole derivatives using MCRs with possible biological activity"
  ♦ Chromatographic Techniques ♦ NMR, MS and IR analyses ♦ Green chemistry
  ♦ MCR chemistry ♦ Organic Chemical Synthesis
- **09/2007 – 08/2008** **BSc Thesis**: "A thorough study on the reaction of DMAD with 1-arylaminoimidazole-2-thiones. Expeditious synthesis of imidazo[2,1-b][1,3]thiazoles through a novel arylamino rearrangement"
  ♦ Chromatographic Techniques ♦ NMR, MS and IR analyses ♦ Organic Chemical Synthesis

Publications

(1) Zhang, L.; Isselstein, M.; Köhler, J.; **Eleftheriadis, N.;** Huisjes, N.M.; Guirao-Ortiz, M.; Narducci, A.; Smit, J.H.; Stoffels, J.; Harz, H.; Leonhardt, H.; Herrmann, A.; Cordes, T. Linker Molecules Convert Commercial Fluorophores into Tailored Functional Probes during Bio-labeling. *Angew. Chemie Int. Ed.* **2022**, e202112959

(2) Krishnamurthy, S.; Sardis, M.F.; **Eleftheriadis, N.**; Chatzi, K.E.; Smit, J; Karathanou, K.; Gouridis, G.; Portaliou, A; Bondar, A.N; Karamanou, S; Economou A. Preproteins couple the intrinsic dynamics of SecA to its ATPase cycle to translocate via a catch and release mechanism. *Cell Reports **2022**, 38* (6), 110346

(3) Gouridis, G.; Muthahari, Y.A.; de Boer, M.; Griffith, D. A.; Tsirigotaki, A; Tassis, K.; Zijlstra, N.; Xu, R.; **Eleftheriadis N**.; Sugijo, Y.; Zacharias, M.; Domling, A.; Karamanou, S.; Pozidis, C.; Economou, A.; Cordes, T.; Structural dynamics in the evolution of a bilobed protein scaffold. *PNAS* **2021**, *118* (49), e2026165118

(4) **Eleftheriadis, N.**; Krishnamurthy, S.; Karathanou, K.; Smit, J; Portaliou, A; Chatzi, K.E.; Karamanou, S; Bondar, A.N; Gouridis, G.; Economou A. A nexus of intrinsic dynamics underlies translocase priming *Structure* **2021**, *29*, 1-13

(5) Luo, Z.; Morey, J.; Deplazes, E.; Motygullina, A.; Tan, A.; Ganio, K.; Neville, S.; **Eleftheriadis, N.**; Isselstein, M.; Pederick, V.; Paton, J.; Cordes, T.; Harmer, J.; Kobe, B.; McDevitt C. A trap-door mechanism for zinc acquisition by *Streptococcus pneumoniae* AdcA. *mBio* **2021**, *12* (1), e01958-20

(6) van der Vlag, R.; Guo, H.; Hapko, U.; **Eleftheriadis, N.**; Monjas, L.; Dekker, F.J.; Hirsch, A.K.H. A combinatorial approach for the discovery of drug-like inhibitors of 15-lipoxygenase-1. *Eur. J. Med. Chem.* **2019**, *174*, 45–55

(7) de Boer, M.; Gouridis, G.; Vietrov, R.; Begg, S. L.; Schuurman-Wolters. G.K.; Husada, F.; **Eleftheriadis, N.**; Poolman, B.; McDevitt, C. A.; Cordes, T. Conformational and dynamic plasticity in substrate-binding proteins underlies selective transport in ABC importers. *E-life,* **2019**, *8*, e44652

(8) Liargkova, T.; **Eleftheriadis, N**; Dekker, F.J.; Voulgari, E.; Avgoustakis, C.; Sagnou, M.; Mavroidi, B.; Pelecanou M.; Hadjipavlou-Litina D. Small Multitarget Molecules Incorporating the Enone Moiety. Molecules, **2019**, *24*(1), 199

(9) Smit, J. H.; van der Velde, J. H. M.; Huang, J.; Trauschke, V.; Henrikus, S. S.; Chen, S.; **Eleftheriadis, N.**; Warszawik, E. M.; Herrmann A.; Cordes T. Photostability and photoswitching of organic fluorophores: competition of inter- and intramolecular triplet-state quenching. *Phys. Chem. Chem. Phys.,* **2019***, 21,* 3721-3733

(10) **Eleftheriadis, N**.; Wojcik, M.; Zwinderman, M. R. H.; Dömling, A.; Dekker, F. J.; Boersma Y. Identification of potential antivirulence agents by substitution-oriented screening for inhibitors of Streptococcus pyogenes Sortase A. *Eur. J. Med. Chem.* **2019**, *161*, 93–100

(11) Kok, T.; Wapenaar, H.; Wang, K.; Neochoritis, C. G.; Zarganes-Tzitzikas, T.; Proietti, G.; **Eleftheriadis, N.**; Kurpiewska, K.; Kalinowska-Tłuścik, J.; Cool, R.; Poelarends, G. J.; Dömling, A.; Dekker, F. J. Discovery of Chromenes as Inhibitors of Macrophage Migration Inhibitory Factor. *Bioorg. Med. Chem.* **2017**, *26*, 999-1055

(12) Guo, H.; **Eleftheriadis, N.**; Rohr-Udilova, N.; Dömling, A.; Dekker, F. J. Photoactivation Provides a Mechanistic Explanation for Pan-Assay Interference Behaviour of 2-Aminopyrroles in Lipoxygenase Inhibition. *Eur. J. Med. Chem.* **2017**, *139*, 633–643

(13) Wapenaar, H.; van den Bosch, T.; Leus, N. G. J.; van der Wouden, P. E.; **Eleftheriadis, N.**; Hermans, J.; Hailu, G. S.; Rotili, D.; Mai, A.; Dömling, A.; Bischoff, R.; Haisma, H. J.; Dekker, F. J. The Relevance of Kicalculation for Bi-Substrate Enzymes Illustrated by Kinetic Evaluation of a Novel Lysine (K) Acetyltransferase 8 Inhibitor. *Eur. J. Med. Chem.* **2017**, *136*, 480–486

(14) Leus, N. G. J.; Van Den Bosch, T.; Van Der Wouden, P. E.; Krist, K.; Ourailidou, M. E.; **Eleftheriadis, N.**; Kistemaker, L. E. M.; Bos, S.; Gjaltema, R. A. F.; Mekonnen, S. A.; Bischoff, R.; Gosens, R.; Haisma, H. J.; Dekker, F. J. HDAC1-3 Inhibitor

MS-275 Enhances IL10 Expression in RAW264.7 Macrophages and Reduces Cigarette Smoke-Induced Airway Inflammation in Mice. *Sci. Rep.* **2017**, *7*

(15) **Eleftheriadis, N**.; Thee, S. A.; Zwinderman, M. R. H.; Leus, N. G. J.; Dekker, F. J. Activity-Based Probes for 15-Lipoxygenase-1. *Angew. Chemie Int. Ed.* **2016**, *55,* 12300 –12305

(16) **Eleftheriadis, N.**; Poelman, H.; Leus, N. G. J.; Honrath, B.; Neochoritis, C. G.; Dolga, A.; Dömling, A.; Dekker, F. J. Design of a Novel Thiophene Inhibitor of 15-Lipoxygenase-1 with Both Anti-Inflammatory and Neuroprotective Properties. *Eur. J. Med. Chem.* **2016**, *122*, 786–801

(17) **Eleftheriadis, N.**; Dekker, F. J. The Role of Human 15-Lipoxygenase-1 in Asthma. *SM J. Pulm. Med.* **2016**, *2* (1), 1015.

(18) **Eleftheriadis, N.**; Samatidou, E.; Neochoritis, C. G. First Catalytic Hetero-Diels–Alder Reaction of Imidazole-2-Thiones and in Silico Biological Evaluation of the Cycloadducts. *Tetrahedron* **2016**, *72* (14), 1742–1748

(19) **Eleftheriadis, N.**; Neochoritis, C. G.; Leus, N. G. J.; van der Wouden, P. E.; Dömling, A.; Dekker, F. J. Rational Development of a Potent 15-Lipoxygenase-1 Inhibitor with in Vitro and Ex Vivo Anti-Inflammatory Properties. *J. Med. Chem.* **2015**, *58* (19), 7850–7862

(20) **Eleftheriadis, N.**; Kasapidou, P.; Stephanidou-Stephanatou, J.; Tsoleridis, C.; Hadjipavlou-Litina, D.; Kontogiorgis, C.; Pritsa, A.; Papadopoulos, A. One-Pot Synthesis of Highly Functionalized Benzimidazolylisophthalates and (2E)-2-Ethylidene-(1H)-Pyridinecarboxylates by Ultrasound-Promoted Multicomponent Reactions. *Synthesis (Stuttg).* **2015**, *47* (10), 1390–1398

(21) **Eleftheriadis, N**.; Thee, S.; te Biesebeek, J.; van der Wouden, P.; Baas, B.-J.; Dekker, F. J. Identification of 6-Benzyloxysalicylates as a Novel Class of Inhibitors of 15-Lipoxygenase-1. *Eur. J. Med. Chem.* **2015**, *94*, 265–275.

(22) **Eleftheriadis, N**.;Traven, K.; Seršen, S.; Kljun, J.; Bezenšek, J.; Stanovnik, B.; Turel, I.; Dekker, F. J. Ruthenium Complexes as Inhibitors of 15-Lipoxygenase-1. *Polyhedron* **2015**, *101*, 306–313

(23) Neochoritis, C.; **Eleftheriadis, N.**; Tsiantou, A.; Stephanidou-Stephanatou, J.; Tsoleridis, C. One-Pot DBU-Promoted Synthesis of Hydroacridinones and Spirohexahydropyrimidines. *Synlett* **2013**, *24* (20), 2768–2772

(24) Wisastra, R.; Kok, P. A. M.; **Eleftheriadis, N**.; Baumgartner, M. P.; Camacho, C. J.; Haisma, H. J.; Dekker, F. J. Discovery of a Novel Activator of 5-Lipoxygenase from an Anacardic Acid Derived Compound Collection. *Bioorg. Med. Chem.* **2013**, *21* (24), 7763–7778

(25) **Eleftheriadis, N**.; Neochoritis, C. G.; Tsoleridis, C. a; Stephanidou-Stephanatou, J.; Iakovidou-Kritsi, Z. One-Pot Microwave Assisted Synthesis of New 2-Alkoxycarbonylmethylene-4-Oxo-1,5-Benzo-, Naphtho-, and Pyridodiazepines and Assessment of Their Cytogenetic Activity. *Eur. J. Med. Chem.* **2013**, *67*, 302–309

(26) Neochoritis, C.; **Eleftheriadis, N**.; Tsoleridis, C. A.; Stephanidou-Stephanatou, J. A Thorough Study on the Reaction of DMAD with 1-Arylaminoimidazole-2-Thiones. Expeditious Synthesis of imidazo[2,1-*b*][1,3]thiazoles through a Novel Arylamino Rearrangement. *Tetrahedron* **2010**, *66* (3), 709–714

(27) Vougioukalaki, M.; Konstantinidou, M.; **Eleftheriadis, N**.; Dömling, A.; Gouridis, G. Ras structures and direct pharmacological targeting ***Submitted***

Oral/Poster Presentations (selected)

(1) ChemCys, Blankenberge, Belgium 19-21/02/2020 (poster presentation)

(2) BPE2018, Leuven, Belgium 30/09-03/10/2018 (poster presentation)

(3) FIGON Dutch medicine days, Ede, The Netherlands 03-04/10/2016 (**invited** oral presentation)

(4) CHAINS 2015, Veldhoven, The Netherlands 01-02/12/2015 (oral presentation)

(5) 29th Annual Symposium of The Protein Society, Barcelona, Spain 22-25/7/2015 (poster presentation)

(6) CHAINS 2014, Veldhoven, The Netherlands 17-18/11/2014 (poster presentation)

(7) FIGON Dutch medicine days, Ede, The Netherlands 06/10/2014 (poster presentation)

(8) EUCHEM Conference on Organic Free Radicals, Prague, Czech Republic 01-04/07/2014 (**invited** oral presentation)

(9) NWO meeting, Lunteren, The Netherlands 04-05/11/2013 (poster presentation)

(10) 21st Panhellenic Conference of Chemistry, Thessaloniki, Greece 9-12/12/2011 (oral presentation)

(11) 2nd International Symposium in Organic Chemistry, Sofia, Bulgaria 13-16/12/2008 (poster presentation)

Conferences/Workshops (selected)

(1) Medicinal Chemistry of Protein-Protein Interactions, Utrecht, The Netherlands 27/03/2015

(2) Seminar for Computer in Medicinal Chemistry, Utrecht, The Netherlands 28/03/2014

(3) Seminar for BioTek Microplate Readers and Spectrophotometers, Almere, The Netherlands 12/06/2013

(4) Epigenetic Rome Training School, Rome, Italy, 21-24/05/2013

(5) MOE User group meeting and training sessions, Amsterdam, The Netherlands 08-12/04/2013

Teaching/Working experience

- **11/2021** — Teaching a module in Structural Biotechnology, Introduction and applications of (sm)FRET in Structural Biology, MSc course, University of Crete, Greece
- **2012 – 2021** — Supervisor of international MSc and BSc students
  Organic Chemistry, Biology and Biophysics, University of Groningen and KU Leuven
- **2017** — Founder of the ChessBioChem platform (https://nikolaoselef.wixsite.com/chessbiochem)
- **January 2015** — Teaching the Organic chemistry practical course
  Organic Chemistry Laboratory, Chemistry Department, University of Groningen
- **09/2010 – 05/2011** — Instructor in undergraduate Organic chemistry practicals
  Organic Chemistry Laboratory, Chemistry Department, Aristotle University of Thessaloniki
- **2011 – 2018** — Member of the organizing committee of: 4th Environmental Conference of Macedonia, 21st Panhellenic Conference of Chemistry, 17th Seminar of Education in Chemistry, BPE2018
- **2009 – 2012** — Private lessons in chemistry, physics and mathematics to high school students
- **Summer 2007** — Trainee in Athenian Brewery S.A. (Heineken), Thessaloniki, Greece
  ♦ Food analysis ♦ HACCP (**H**azard **A**nalysis and **C**ritical **C**ontrol **P**oints)

Skills

- **Languages** — Greek, English
- **Laboratory** — **Chemistry**: ♦ Organic chemical synthesis and purification ♦ NMR, MS and IR analysis
  Biology: ♦ Protein expression and purification ♦ Protein labeling ♦ SDS-PAGE ♦ Western Blot ♦ Cell culture ♦ Enzyme Activity Assays ♦ Enzyme Kinetics
  Biophysics: ♦ Single-molecule Forster Resonance Energy Transfer (confocal solution, confocal scanning)
- **Computer Software** — **Chemistry** (ChemOffice, Marvin Sketch, Mestrenova, DataWarior)
  Biology (GraphPadPrism, Gen5 Microplate Reader and Imager Software)
  Molecular Modeling (MOE software, Pymol, MOLOC, LeadIT, Schrödinger)
  General (Microsoft Office, Photoshop, Illustrator, Canvas)
- **Other** — Driving license, Leadership skills (ChessBioChem, President of Postgraduate Soc. 2011-2)

Awards/Fellowships

- **2020** — Poster Award – ChemCys2020 conference (Life Science)
- **2019** — Marie Skłodowska-Curie Actions - Seal of Excellence Postdoctoral Fellowship, FWO (2 years)

- **2017-2019** Reserve list in Rubicon Fellowship (NWO), Marie Skłodowska-Curie Fellowship - Seal of Excellence Award, FEBS Long-Term Fellowship
- **2017** PhD with the distinction *cum laude*
- **2016** Selected to represent the University of Groningen with an oral presentation for the PhD competition at FIGON Dutch medicine days conference
- **2011** Award for outstanding performance in MSc degree from Alexandrou Foundation
- **2010** Prize of excellence for the BSc from Athenian Brewery S.A

Hobbies and Interests

• Chess • Running • Guitar • Cooking • Traveling • Gardening

Teaching philosophy/methodology

I was always believing that in this world there are two types of people; the ones that their job provides them with just the allowance to live and survive, who unfortunately is the majority, and the rest which their work besides the pay cheque, gives them energy, happiness, smile in their face, fulfilment. My teaching philosophy and aim is to change this balance and raise only people from the second category. My ambition is to transfer to every single student, my enthusiasm, great zeal and passion for science. I want them to realize that science provides both the questions and the answers.

Apart from my passion for scientific research and excellence, I strongly believe that transferring this "cocktail" of knowledge and enthusiasm to younger students is equally important. My aim is to motivate the students and make them interested about our scientific projects. I am really glad to see that many of my students continue for a PhD. The key to this success is to "unlock" the student, adjusting your teaching methodology by the students' unique character and scientific background and tuning the speed of gradually learning from the basics to more advanced subjects. I think that there is no "recipe" for perfect teaching, but the most important thing is to use the passion "ingredient".

My previous supervisors had already realized from the beginning my teaching talent, and I was always the first one to choose to supervise students and especially the ones with poor social skills. For me, it was always a challenge and I can proudly refer to my former MSc student with autism who is now an excellent PhD student. In the final year of my PhD, my supervisor allowed to create my own research team within his group, giving me the freedom to exploit my own scientific ideas using my teaching methodology and leadership skills. Finally, this dedication has also been recognized by my last postdoctoral supervisor as he assigned me, exceptionally, as a co-promotor to a MSc student. Based on the above philosophy, I have supervised more than 15 MSc and BSc students and I also advised many PhD students.

The most important in subject teaching is the **respect for diversity and equality**. I am a great supporter of that while, having a strong mobility component in my profile, I have had students from various countries all over the world with different genders, cultural differences and religion beliefs. There are no differences in students, all of them are equally deserve a ticket to the magnificent trip of science. Starting my own online platform (ChessBioChem) and taking entrepreneurship lessons for a year, I learned various ways to promote, communicate and advertise my work. I aim to use these skills to communicate our projects (website of the university and social media) to different target audiences, which will include other academic groups worldwide, university and high school students and the public, **promoting equality** and **respecting diversity**.