

Nikolaos Eleftheriadis



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

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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

- **07/2021 – 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. Expedient synthesis of imidazo[2,1-b][1,3]thiazoles through a novel arylamino rearrangement"
♦ Chromatographic Techniques ♦ NMR, MS and IR analyses ♦ Organic Chemical Synthesis

- (1) **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
- (2) 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
- (3) 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
- (4) 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
- (5) 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
- (6) 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
- (7) **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
- (8) 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
- (9) 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
- (10) 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
- (11) 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*
- (12) **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
- (13) **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
- (14) **Eleftheriadis, N.**; Dekker, F. J. The Role of Human 15-Lipoxygenase-1 in Asthma. *SM J. Pulm. Med.* **2016**, *2* (1), 1015.

- (15) **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
- (16) **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
- (17) **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
- (18) **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.
- (19) **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
- (20) 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
- (21) 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
- (22) **Eleftheriadis, N.**; Neochoritis, C. G.; Tsoleridis, C. a; Stephanidou-Stephanatou, J.; Iakovidou-Kritsi, Z. One-Pot Microwave Assisted Synthesis of New 2-Alkoxy carbonylmethylene-4-Oxo-1,5-Benzo-, Naphtho-, and Pyridodiazepines and Assessment of Their Cytogenetic Activity. *Eur. J. Med. Chem.* **2013**, *67*, 302–309
- (23) 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
- (24) de Boer, M.; Gouridis, G.; Muthahari, Y. A.; Tassis, K.; Tsirigotaki A.; **Eleftheriadis, N.**; Economou A.; Cordes T. An evolutionary path to tweak protein conformational dynamics for function and specificity **Under revision**
- (25) 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
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Teaching/Working experience

- **2012 – present** Supervisor of 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)
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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, DataWarrior)
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)
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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
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Hobbies and Interests

- Chess
- Running
- Guitar
- Cooking
- Traveling
- Gardening