

Fylaktakidou Konstantina, Professor, Chemistry Department, Aristotle University, Thessaloniki, Greece



PERSONAL INFORMATION

- **DATE OF BIRTH:** 6/9/1968
- **GENTER:** Female
- **NATIONALITY:** Greek
- **WORK ADDRESS:** Laboratory of Organic Chemistry, Old Chemistry Building, Room 302, Chemistry Department, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece
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ACADEMIC POSITIONS

- **2019 – today:** Professor, Field of Expertise: “**Chemistry of Organic Compounds**”, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki (A.U.Th.), Greece. *Activities:* Teaching, Research, Administration.
- **2002 – 2019:** Assistant Professor, Associate Professor and Full Professor (since 2016), Department of Molecular Biology and Genetics, Democritus University of Thrace (D.U.Th.), Alexandroupolis, Greece.

EDUCATION

- **2015 – 2016:** Visiting Professor (on sabbatical leave, 12 months). Microwave assisted synthesis and DNA affinity studies. *Host :* A.U.Th , Lab. of Organic and Inorganic Chemistry.
- **2007 – 2008:** Visiting Professor (on sabbatical leave, 6 months). Institut de Science et d'Ingénierie Supramoléculaires, Strasbourg, France. *Supervisor:* J.-M. Lehn. *Research field:* Synthesis and biological study of carbohydrate polyphosphorylated derivatives.
- **2002 – 2001:** Post-doctoral researcher (12 months), University Louis Pasteur, Strasbourg, France. *Supervisor:* J.-M. Lehn. *Research field:* Medicinal Chemistry of polyphosphorylated molecules.
- **1998 – 2001:** Post-doctoral researcher (3.5 years), The Scripps Research Institute, La Jolla, CA, USA. *Supervisor:* K. C. Nicolaou. *Research field:* Total synthesis of natural products (everninomicin 13,384-1 and apoptolidin).
- **1992 – 1997:** Ph.D. in Organic Chemistry, Department of Chemistry, A.U.Th. *Supervisor:* D.N. Nicolaides. *Thesis title:* “Synthesis and study of fused linear and 4-substituted coumarin derivatives”.
- **1986 – 1991:** B.Sc., Department of Chemistry, A.U.Th. (graduation grade 8.01/10).

RESEARCH INTERESTS AND EXPERIENCE

- Total synthesis of natural products, methodologies for organic synthesis, medicinal chemistry.
- Carbohydrate and inositol chemistry and phosphate salts thereof.
- Chemistry of heterocyclic compounds: oxadiazoles, coumarins, pyridine oximes, quinazolin(on)es, quinolones and metal complexes thereof.
- Photochemistry and Photobiology.

PUBLICATION RECORD

- **64 publications** in peer-reviewed journals. Average Impact Factor 5.11 (2024). **72 announcements-talks** in national and international conferences. 25 patent applications / 1 book chapter (invited). Sum of hetero-citations: 2848, *h* index = 27, (26/9/2024, Scopus). Total citations: 3068, *h* index = 28, (26/9/2024, Scopus). **ORCID iD:** <https://orcid.org/0000-0002-2186-2617>; **Scopus ID:** 6701683905.

DISTINCTIONS (Personal and Research)

- Award from the Greek State for achieving the 5th higher grade to study Chemistry at the Chemistry Department in Thessaloniki, passing Panhellenic National Exams.
- Fellow of «The George Hewitt Foundation for Medical Research» for Post Doctoral Research at The Scripps Research Institute, USA.
- Fellow of «GMP Companies Inc», for Post Doctoral Research at University Louis Pasteur, France.
- Accomplishment of the Total Synthesis of Everninomicin 13,384-1, the most complex oligosaccharide ever synthesized in a Laboratory. «Complex Oligosaccharide Made by Total Synthesis», Stu Borman, *Chemical and Engineering News*, 22 Nov. 1999, vol 77(47).
- The book «*The Organic Chemistry of Sugars*» D. E. Levi, P. Fugedi, Ed. Taylor and Francis, CRC Press, 2006, ISBN 9780824753559 has as a cover picture Everninomicin 13,384-1, and extensively comments its synthesis.
- Publication «*Total Synthesis of Apoptolidin: Construction of Enantiomerically Pure Fragments*», *J. Am. Chem. Soc.*, 125, 15433-15442 (2003) in 2004 was the 8th most downloaded publication among the users of SciFinder, SciFinder Scholar, STN, and CA on CD, for chemistry and related sciences, (ref: <http://info.cas.org/spotlight/rlist4q04j/rlist4q04j.html>). Site does not currently exist, however copy of a Web shortcut can be provided from a personal archive.
- Publication «*Enhanced exercise capacity in mice with severe heart failure treated with an allosteric effector of hemoglobin, myo-inositol trispyrophosphate*», *Proc Nat Acad Sci USA*, 106, 1926-1929 (2009) has been extensively reviewed in media like Bioworld, New Scientist, Reuters and RSC. (<http://www.bioworld.com/content/loosening-hemoglobins-grip-oxygen-may-help-heart-failure>, <https://www.newscientist.com/article/dn16564-chemical-drink-breathes-life-into-damaged-hearts/>, <http://www.reuters.com/article/2009/02/09/us-heart-drug-idUSTRE51884020090209>).
- ITPP project, owned by Normoxys company with the name OXY111A (code comes from my lab notebook reaction code 111A) in 2011 was recognized as one of the Windhovers Information Inc.'s top 10 Cardiovascular/Metabolic Projects to watch. (<http://www.businesswire.com/news/home/20101103005733/en/NormOxys%E2%80%99-Oxygen-Enhancing-Drug-Candidate-OXY111A-Recognized-Windover%E2%80%99s#.VhY24m7o4ig>). Site does not currently exist, however copy of a Web shortcut can be provided from a personal archive.
- ITPP is in Human Clinical Trials phase 2 from 2014 and is commercially available. https://en.wikipedia.org/wiki/Myo-inositol_trispyrophosphate.
- Publication «*Polyphosphates and Pyrophosphates of Pentopyranoses and Pentofuranoses as Allosteric Effectors of Human Hemoglobin: Synthesis, Molecular Recognition and Oxygen Release*», *ChemMedChem*, 6, 1495-1508 (2011), DOI: 10.1002/cmdc.201100110, has been recognized by the Journal as **VIP** (Very Important Paper).

RESEARCH PROGRAMS

16 approved, in 3 as PI and in 2 as supervisor.

PUBLICATIONS LIST (Selected)

1. P. Paisidis, M.G. Kokotou, A. Kotali, G. Psomas, K.C. Fylaktakidou,* «One-Pot, Multi-Component Green Microwave-Assisted Synthesis of Bridgehead Bicyclo[4.4.0]boron Heterocycles and DNA Affinity Studies». *Int. J. Mol. Sci.*, **25**, 9842 (2024). DOI: <https://doi.org/10.3390/ijms25189842>.
2. A. Mitrakas, Stathopoulou, M.-E.K., C. Mikra, C. Konstantinou, S. Rizos, S. Malichetoudi, A.E. Koumbis, M. Koffa, K.C. Fylaktakidou,* «Synthesis of 2-Amino-N'-aroyl(het)arylhydrazides, DNA Photocleavage, Molecular Docking and Cytotoxicity Studies against Melanoma CarB Cell Lines». *Molecules*, **29**, 647 (2024). DOI: <https://doi.org/10.3390/molecules29030647>.
3. A. Panagopoulos, K. Alipranti, K. Mylona, P. Paisidis, S. Rizos, A. E. Koumbis, E. Roditakis, K. C. Fylaktakidou,* «Exploration of the DNA photocleavage activity of O-halo-phenyl carbamoyl amidoximes. Studies over the UVA induced effects on a major crop pest, the whitefly *Bemisia tabaci*», *DNA*, **3**, 85-100 (2023). DOI: <https://doi.org/10.3390/dna3020006>.
4. C. Mikra, A. Mitrakas, V. Ghizzani, K. R. Katsani, M. Koffa, M. Koukourakis, G. Psomas, S. Protti, M. Fagnoni,* K. C. Fylaktakidou,* «Effect of arylazo sulfones on DNA: Binding, Cleavage, Photo-cleavage and Molecular Docking Studies. Interaction with A375 melanoma cells», *Int. J. Mol. Sci.*, **24**, 1834 (2023). <https://doi.org/10.3390/ijms24031834>.

5. C. Mikra, Z. Melissari, M. G. Kokotou, P. Gritzapis, K. C. Fylaktakidou,* «Microwave-assisted synthesis of hydroxamic acid incorporated quinazolin-4[3H]-one derivatives», *Sust. Chem. Pharm.*, **29**, 100772 (2022). DOI: <https://doi.org/10.1016/j.scp.2022.100772>.
6. C. Mikra, M. Bairaktari, M.-T. Petridi, A. Detsi,* K. C. Fylaktakidou,* «Green Process for the Synthesis of 3-Amino-2-Methyl-Quinazolin-4(3H)-One Synthones and Amides Thereof: DNA Photo-Disruptive and Molecular Docking Studies», *Processes*, **10**, 384 (2022). DOI: <https://doi.org/10.3390/pr10020384>.
7. A. Panagopoulos, T. Balalas, A. Mitrakas, V. Vrazas, K. R. Katsani, A. E. Koumbis, K. I. Michael, K. E. Litinas, K. C. Fylaktakidou,* «6-Nitro-Quinazolin-4(3H)-one Exhibits Photo-Dynamic Effects and Photo-Degrades Human Melanoma Cell Lines. A Study on the Photo-Reactivity of Simple Quinazolin-4(3H)-ones», *Photochem. Photobiol.*, **97**, 826-836 (2021), online: 01012021, DOI: <https://doi.org/10.1111/php.13376>.
8. P. Karamtzioti, A. Papastergiou, J. G. Stefanakis, A. E. Koumbis, I. Anastasiou, M. Koffa, K. C. Fylaktakidou,* «O-Benzoyl pyridine aldoxime and amidoxime derivatives: novel efficient DNA photo-cleavage agents», *Med. Chem. Commun.*, **6**, 719-726 (2015), DOI: 10.1039/c4md00548a.
9. K. C. Fylaktakidou, C. D. Duarte, R. Jogireddy, A. E. Koumbis, C. Nicolau, J.-M. Lehn. «Polyphosphates and Pyrophosphates of Pentopyranoses and Pentofuranoses as Allosteric Effectors of Human Hemoglobin: Synthesis, Molecular Recognition and Oxygen Release», *ChemMedChem*, **6**, 1495-1508 (2011), **VIP paper**, DOI: 10.1002/cmdc.201100110.
10. K. C. Fylaktakidou, C. D. Duarte, A. E. Koumbis, C. Nicolau, J.-M. Lehn. «Polyphosphates and Pyrophosphates of Hexopyranoses as Allosteric Effectors of Human Hemoglobin: Synthesis, Molecular Recognition and Effect on Oxygen Release», *ChemMedChem*, **6**, 153-168 (2011), DOI: 10.1002/cmdc.201000366.
11. C. Kieda, R. Greferath, C. C. Da Silva, K. C. Fylaktakidou, J.-M. Lehn, Y. Nicolau. «Suppression of hypoxia-induced HIF-1 α and of angiogenesis in human endothelial cells under hypoxia by erythrocytes loaded with inositol trispyrophosphate», *Proc Nat Acad Sci USA*, **103**, 15576-15581 (2006), DOI: 10.1073/pnas.0607109103.
12. K. C. Fylaktakidou, J.-M. Lehn, R. Greferath, Y. Nicolau. «Inositol Tripyrophosphate-a new, Membrane Permeant Allosteric Effector of Hemoglobin», *Bioorg. Med. Chem. Lett.*, **15**, 1605-1608 (2005), DOI: 10.1016/j.bmcl.2005.01.064.
13. K. C. Fylaktakidou, D. J. Hadjipavlou-Litina, K. E. Litinas, D. N. Nicolaides. «Natural and Synthetic Coumarin Derivatives with Antiinflammatory/Antioxidant Activities», *Curr. Pharm. Design*, **10**, 3813-3833 (2004), DOI: 10.2174/1381612043382710.
14. K. C. Nicolaou, Y. Li, K. Sugita, H. Monenschein, P. Guntupalli, H. J. Mitchell, K. C. Fylaktakidou, D. Vourloumis, P. Giannakakou, A. O'Brate. «Total Synthesis of Apoptolidin: Completion of the Synthesis and Analogue Synthesis and Evaluation», *J. Am. Chem. Soc.*, **125**, 15443-15454 (2003), DOI: 10.1021/ja030496v.
15. K. C. Nicolaou, K. C. Fylaktakidou, H. Monenschein, Y. Li, B. Weyershausen, H. J. Mitchell, H.-X. Wei, P. Guntupalli, D. Hepworth, K. Sugita. «Total Synthesis of Apoptolidin: Construction of Enantiomerically Pure Fragments», *J. Am. Chem. Soc.*, **125**, 15433-15442 (2003), DOI: 10.1021/ja0304953.
16. A. Emmanuel-Giota, K. C. Fylaktakidou, D. Hadjipavlou-Litina, K. E. Litinas, D. N. Nicolaides «Synthesis and Biological Evaluation of Several 3-(Coumarin-4-yl)tetrahydroisoxazole and 3-(Coumarin-4-yl)dihydropyrazole Derivatives», *J. Heterocyclic Chem.*, **38**, 717-722 (2001), DOI: 10.1002/jhet.5570380329.
17. K. C. Nicolaou, H. J. Mitchell, K. C. Fylaktakidou, H. Suzuki, R. M. Rodriguez. «1,2-Seleno-migrations in Carbohydrate Chemistry: Solution and Solid Phase Synthesis of 2-Deoxy-Glycosides, Orthoesters and Allylic Orthoesters», *Angew. Chem. Int. Ed.*, **39**, 1089-1093 (2000), DOI: 10.1002/(SICI)1521-3773(20000317)39:6<1089::AID-ANIE1089>3.0.CO;2-V.
18. K. C. Nicolaou, H. J. Mitchell, H. Suzuki, R. M. Rodriguez, O. Baudoin, K. C. Fylaktakidou. «Total synthesis of Everninomicin 13,384-1. Part 1: Synthesis of the A₁B(A)C Fragment», *Angew. Chem. Int. Ed.*, **38**, 3334-3339 (1999), DOI: 10.1002/(SICI)1521-3773(19991115)38:22<3334::AID-ANIE3334>3.0.CO;2-H.
19. D. N. Nicolaides, K. C. Fylaktakidou, K. E. Litinas and D. Hadjipavlou-Litina. «Synthesis and Biological Evaluation of Several Coumarin-4-Carboxamidoxime and 3-(Coumarin-4-yl)-1,2,4-oxadiazole Derivatives», *Eur. J. Med. Chem.*, **33**, 715-724 (1998), DOI: 10.1016/S0223-5234(98)80030-5.