

CURRICULUM VITAE

Name : **Georgios A. SPYROULIAS**

Date of Birth : 16 October 1965, Thessaloniki

Marital Status : Married (1 child)

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Academic Background :

- September 1989 **B.Sc. In Chemistry**, Aristotle University of Thessaloniki, **Thessaloniki, Greece.**
- February 1992 **M.Sc. In Chemistry, (Supervisor Dr. Athanassios Coutsolelos)** « *Bioinorganic Chemistry of Coordination Compounds* », Department of Chemistry, University of Crete, **Greece.**
- February 1995 **Ph.D. In Chemistry, (Supervisor Dr. Athanassios Coutsolelos)**, Department of Chemistry, University of Crete, **Heraklion, Greece.**

Current Professional Status :

- September 2014 **Professor** University of Patras, Department of Pharmacy, **Patras, GREECE.**
Design/Simulation of bioactive molecules with pharmacological interest.

Professional Appointments :

- July-August 1987 «**EKO**» **Chemicals, Co.** Department of Chemical Processes, **Thessaloniki, GREECE.**
- May 1995 **Short-term Post-Doctoral Research (in Prof. I. Bertini's lab**, Università degli Studi di Firenze, **Firenze, ITALY)**
- June 1995 **Short-term Post-Doctoral Research (in Prof. R. Poilblanc's lab**, Laboratoire de Chimie de Coordination, C.N.R.S, **Toulouse, FRANCE.)**
- October 1995 **Post-Doctoral Fellow (in Dr. D. Mansuy's lab**, René Descartes, Paris V, Laboratoire De Chimie et Biochimie, C.N.R.S. URA 400, **Paris, FRANCE.)**
- January 1997 **Post-Doctoral Fellow (in Prof. I. Bertini's lab**, Università degli Studi di Firenze, Laboratorio di Chimica Inorganica e Bioinorganica, **Firenze, ITALY)**
- May 2000 **Post-Doctoral Fellow (in Prof P. Kordopatis' lab**, University of Patras, Department of Pharmacy, **Patras, GREECE).**
- May 2001 **Research Associate**, University of Patras, Department of Pharmacy, **Patras, GREECE.**
- August 2003 **Assistant Professor** University of Patras, Department of Pharmacy, **Patras, GREECE.**
- December 2009 **Associate Professor** University of Patras, Department of Pharmacy, **Patras, GREECE.**

Current Research Activities and Interests:

- ⊙ Design/Simulation and Engineering of Bioactive Molecules & Structure-Activity relationship, (small molecules, peptides, proteins)
- ⊙ NMR Structural Biology of proteins, protein complexes and protein-peptide/RNA/small molecules complexes, and Computational Biology, Structural Bioinformatics.
- ⊙ Molecular Biology, protein production, labeling (uniform or selective labeling (^{15}N , ^{13}C , ^2H , residue specific labeling, etc.) and isolation for functional studies and Biomolecular NMR

Fellowships & Awards:

- « **EMY** » Fellowship for PhD research, Ministry of Education (U of Crete, **GREECE**; 11/1989-10/1994).
- « **ERASMUS** » Grant (Contract N^o: ICP-92-G-2002/13. University Paul Sabatier, CNRS, **Toulouse, FRANCE** ; 11/1992-4/1993).
- « **DIGITAL CORPORATION AWARD** » for Achievement in PhD Research (U of Crete, **GREECE**; 1993).
- « **CLAUDE BERNARD Fondation** » Grant (U René Descartes, **Paris, FRANCE** ; 11/1996-12/1996).
- « **Platon** » **Bilateral Cooperation Scientifique Franco-Hellenique**, REF. PAI/GRC 9508. **1994-1995**, University of Crete, Department of Chemistry, **GREECE** & Laboratoire de Chimie de Coordination, C.N.R.S, Toulouse, **FRANCE**.

Educational activities in Graduate Research Programs & Supervision of Experienced Researchers (since 2003)

Supervised 4 Post-Docs, 3 PhDs, 13 Masters and 34 Degree Thesis.

Advisory Committee in 10 Masters, 8 Ph.D. and Examination Committee in 18 Ph.D.

Currently: Supervision of 5 Doctoral, 6 Masters and 12 Diploma Theses. Member in 4 PhD examination committees

Professional Memberships:

- Greek Chemists Association,
- Marie-Curie Fellowship Association (Hellenic MCFA, Vice-Chair, 2006- 2008),
- European Peptide Society (Greek Effective Member 2014-2018),
- Hellenic Society for Biochemistry & Molecular Biology.
- Hellenic Society for Computational Biology and Bioinformatics.
- Hellenic Crystallographic Association.

Languages:

Greek (Native), English, French, Italian.

Representative Competitive Research Grants Awarded :

1. **Marie Curie Research Training Grant (EU)** - Contract N° : ERBFMBICT 972477. "NMR Spectroscopy to study the factors controlling the folding/unfolding process in Paramagnetic Metalloproteins", **1997-1999**, Department of Chemistry, U of Florence, **ITALY**. Grant Holder
2. **Marie Curie Research Grant (EU)** - Contract N° : HPMF-CT-1999-00344. "NMR Structural Studies of Chemically Modified c-Cytochromes as a probe of Protein Folding Pathways", **2000-2001**, Department of Pharmacy, U of Patras, **GREECE**. Grant Holder
3. **EMBO Short-term Research Grant**, Center of Magnetic Resonance, Florence, **ITALY**. Principal Investigator.
 - Contract N° : ASTF 53-2003, "NMR Structure Elucidation of Angiotensin-I Converting Enzyme (ACE) Catalytic Sites and Their Complexes With Angiotensin-I", **2003**.
 - Contract N° : ASTF 99-2004, "Mapping the Contact Interface of HIV gp120 V3 and CD4+ T-Cell CCR5 N-terminal Peptides through NMR Spectroscopy : Implications for HIV Inhibitors Design", **2004**.
4. **FP6-2005-LIFESHEALTH (EU)**, "Applied Venomics of the Cone Snail Species *Conus* Consors for the Accelerated, Cheaper, Safer and More Ethical Production of Innovative Biomedical Drugs (CONCO)". Contract N° 037592, www.conco.eu, **2005-2010**. U of Patras, Partner #9, Co-Investigator
5. **FP7-HEALTH-2007-2.1.1-5. (EU)**, 'Neurotransmitter Cys-loop receptors: structure, function and disease (NeuroCypress)', CP-Collaborative Project, Contract N° HEALTH-F4-2008-202088, www.neurocypress.eu, **2008-2012**. U of Patras, Partner #15, Principal Investigator
6. **FP7-INFRA-2008-1.1.1. (EU)**, "Enhancing Access and Services To East European users towards an efficient and coordinated pan-European pool of NMR capacities to enable global collaborative research and boost technological advancements", Integrated Activities, Contract N° CP-CSA-Infra-228461, www.east-nmr.eu, **2009-2013**. U of Patras, Partner #12, Principal Investigator
7. «**ΗΡΑΚΛΕΙΤΟΣ II: Reinforcing the Human Research Potential through Graduate Research** » (Greek Ministry of Education, GREECE), "Expression, Characterization and Structural Investigation through Nuclear Magnetic Resonance (NMR) of the *Bacillus anthracis* Anthrax Lethal Factor Zn-protease Catalytic Site", **2011-2014**. U of Patras, Principal Investigator.
8. "GSRT- THALIS: Reinforcing the Human Research Potential through Graduate Research" (GSRT, Greek Ministry of Education, GREECE), "Hydrogen sulfide, a new endogenous regulator of angiogenesis: signaling, physiology/pathophysiology and development of pharmacological inhibitors", **2011-2015**. (Coordinator: Lab. of Mol. Pharmacology, Dept. of Pharmacy), Co-Investigator.
9. **FP7-REGPOT-2011-1. (EU)**, "SEE-DRUG: Establishment of Centre of Excellence for Structure-Based Drug Target Characterization: Strengthening the Research Capacity of South-Eastern Europe", Contract N° CT-2011-285950, www.seedrug.upatras.gr, **2012-2015**. U of Patras (Budget: 3.2MEuros), Coordinator.
11. **H2020-INFRAIA-2014-2015** - Integrating and opening existing national and regional research infrastructures of European interest (**European Union**), "iNEXT: Infrastructure for NMR, EM and X-ray crystallography for translational research", Contract N° 653706, **2015-2020**. U of Patras, Partner #22. Principal Investigator.
27. **EDMB34 - «Supporting Research teams with emphasis in the support of Young Investigators** », **ESPA 2014-2020**: "The role of the catalytic domain of the E3 Ubiquitin Ligase Arkadia in enzyme's function regulation and in diagnosis", **2018-2019**, U of Patras, (Budget: 56.5KEuros) Coordinator.
28. **HFRI (ELIFDEK) Program «Supporting Post-Doctoral Researchers»**, «ECHNO: Enlightening the Conformational Changes of HNOX domain of soluble guanylate cyclase (sGC) by discrimination of diatomic gases», **2018-2021**, (Grant Holder: Dr. Aikaterini Zompra, Budget: 200KEuros), Supervisor & PI of the Coordinator Organisation.
29. **H2020-MSCA-IF-2017** - **MARIE SKŁODOWSKA-CURIE ACTIONS (EU)**, "NMRSIGN: NMR insights on the soluble Guanylyl Cyclase conformational dynamics to illuminate the **SIGN**aling pathway" Contract No 795175, (Grant Holder: Dr. George Dalkas, Budget: 165KEuros), Supervisor & PI of the Coordinator Organisation.

Recent Representative Oral Presentations & Seminars (91) :

Among them are included seminars in a number of Greek and EU Universities (Patras, Athens, Crete, Thessaly, Grenoble, Florence, Vienna, Edinburgh, Munich etc) and Research Institutes (NHRF, IMBB, NCSR Demokritos) and talks in a number of national and international conferences in Biomolecular NMR, Structural Biology and Xray Crystallography.

Representative Journal Publications (95; 39 as corresponding author: underlined):

1. L. Banci, I. Bertini, S. Ciofi-Baffoni, N.G. Kandias, **G.A. Spyroulias**, N.J. Robinson, M. Vanarotti, X.-C. Su. *The delivery of copper for thylakoid import observed by NMR.* **Proc. Natl Acad Sci. USA** 103, 8320-8325 (2006).
2. A. Papakyriakou, **G.A. Spyroulias**, E. Sturrock, E. Manessi-Zoupa, P. Cordopatis. *Simulated Interactions between Angiotensin-Converting Enzyme and Substrate Gonadotropin-Releasing Hormone: Novel Insights into Domain-Selectivity.* **Biochemistry ACS** 46, 8753-8765 (2007).
3. Z. Spyranti, G.A. Dalkas, **G.A. Spyroulias**, E.D. Matzourani, T. Mavromoustakos, I Friligou, T. Tselios. *Putative bioactive conformations of amide linked cyclic myelin basic protein peptide analogues associated with experimental autoimmune encephalomyelitis.* **Journal of Medicinal Chemistry** 50, 6039-6047 (2007).
4. M.A. Fouteris, A. Papakyriakou, A. Koutsourea, M. Manioudaki, E. Lampropoulou, E. Papadimitriou, **G.A. Spyroulias**, S.S. Nikolaropoulos. *Pyrrolo[2,3-a]carbazoles as potential CDK1 inhibitors. Synthesis, preliminary biological evaluation and binding mode through docking simulations.* **Journal of Medicinal Chemistry** 51, 1048-1052 (2008).
5. L.A. Abriata, L. Banci, I. Bertini, S. Ciofi-Baffoni, P. Gkazonis, **G.A. Spyroulias**, A.J. Vila, S. Wang. *Mechanism of CuA assembly.* **Nature Chemical Biology** 4, 599-601 (2008).
6. G.A. Dalkas, C. Chasapis, P. Gkazonis, D. Bentrop, **G.A. Spyroulias**. *The NMR Conformational Dynamics of the Anthrax Lethal Factor (LF) catalytic center.* **Biochemistry ACS** 49, 10767-10769 (2010).
7. C.T. Chasapis, A. Argyriou, P.-J. Corringer, D. Bentrop, **G.A. Spyroulias**. *Unraveling the conformational plasticity of the extracellular domain of a prokaryotic nAChR homologue in solution by NMR.* **Biochemistry ACS** 50, 9681-9683 (2011).
8. C.T. Chasapis, N.G. Kandias, V. Episkopou, D. Bentrop, **G.A. Spyroulias**. *NMR Based Insights into the conformational and interaction properties of Arkadia RING-H2 E3 Ub Ligase.* **Proteins: Structure, Function & Bioinformatics** 80, 1484-1489 (2012).
9. M. von Wantoch Rekowski, V. Kumar, Z. Zhou,; M. Bantzi, A. Marazioti, J. Moschner, **G.A. Spyroulias**, F. van den Akker, A. Giannis, A. Papapetropoulos. *Insights into soluble guanylyl cyclase activation derived from improved heme-mimetics.* **Journal of Medicinal Chemistry** 56, 8948–8952 (2013).
10. D. Vourtsis, C.T. Chasapis, D. Bentrop, **G.A. Spyroulias**. *NMR Conformational dynamics of an Anthrax Lethal Factor domain studied by multiple amino acid-selective labeling.* **Biochemical and Biophysical Research Communications** 450, 335-40 (2014).
11. M. Suarez-Diez, J. Adam, J. Adamski, S.A. Chasapi, C. Luchinat, A. Peters, C. Prehn, C. Santucci, A. Spyridonidis, **G.A. Spyroulias**, L. Tenori, R. Wang-Sattler, E. Saccenti. *Plasma and serum metabolite association networks: comparability within and between studies using NMR and MS profiling* **Journal of Proteome Research** 16, 2547-2559, (2017),
12. M-T. Matsoukas & **G.A. Spyroulias**. *Dynamic properties of the Growth Hormone Releasing Hormone Receptor (GHRHR) and molecular determinants of GHRH binding* **Molecular BioSystems** 13, 1313-1322 (2017),
13. M. Birkou, A. Loutsidou, C.T. Chasapis, D. Bentrop, M. Leli, T. Herrmann, V. Episkopou, **G.A. Spyroulias**. *A residue-specific insight into the Arkadia E3 ubiquitin ligase activity and conformational plasticity.* **Journal of Molecular Biology** 429, 2373-2386 (2017).
14. E. Zvintzou, M. Lhomme, S.A. Chasapi, S. Filou, V. Theodoropoulos, E. Xapapadaki, A. Kontush, **G.A. Spyroulias**, K.E. Kypreos. *Pleiotropic Effects of Apolipoprotein C3 on HDL Functionality and Adipose Tissue Metabolic Activity.* **Journal of Lipid Research** 58, 1869-1883, (2017).

Citations

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>1850

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Deposited Structural and NMR data- Atomic Coordinates of NMR models & Chemical Shifts :

PDB – Protein Data Bank (<http://www.rcsb.org/pdb/>): 26 entries

BMRB – Biological Magnetic Resonance Bank (<http://www.bmrwisc.edu/>): 24 entries

Other Publications : (A) Book Chapters

A1. A. Coutsolelos, **G.A. Spyroulias**. “**Chapter 4: NMR of Organozinc compounds - ⁶⁷Zn NMR, a tool for coordination chemistry problems.**”

In “**The Chemistry of Organic Zinc Compounds**”, Zvi Rappoport (Editor), Ilan Marek (Editor), John Wiley & Sons, Ltd., 2006.

A2. T. Mavromoustakos, S. Golic Grdadolnik, M. Zervou, P. Zoumpoulakis, C. Potamitis, A. Politi, E. Mantzourani, J. A. Platts, C. Koukoulitsa, P. Minakakis, G. Kokotos, T. Tselios, J. Matsoukas, S. Durdagi, M.G. Papadopoulos, D.P. Papahatjis, Z.S. Spyranti, G.A. Dalkas, **G.A. Spyroulias**. **Chapter 7: Putative Bioactive Conformers of Small Molecules: A Concerted Approach Using NMR Spectroscopy and Computational Chemistry.**

In “**Medicinal Chemistry Research progress**”, Editors: Giulia P. Colombo and Sofia Ricci, Nova Science Publishers, Inc., 2008.

A3. G.A. Spyroulias. *Peptide substrate selectivity and Dual Inhibitors of ACE and NEP vasopeptidases*

In “**Essays on Contemporary Peptide Science**”: 75-94 ISBN: 978-81-308-0428-6. Editor: Paul Cordopatis, 2011.

Participation in Congresses and Conferences :

Participation to >80 Scientific Congresses and Conferences (50 International and >30 National – Greek) with a total number of >240 Communications, Abstracts and Short papers