

# CURRICULUM VITAE ANGELIKI CHRONI

## Research Director

**Institute of Biosciences and Applications (IBA),**

**National Center for Scientific Research «Demokritos» (NCSR Demokritos)**

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## Academic appointments, postdoctoral training and education

- 5/2015 - now      **Research Director**, Institute of Biosciences and Applications (former Institute of Biology), NCSR Demokritos, Athens, Greece
- 9/2015- 9/2017    **Visiting Professor**, Department of Chemistry, University of Athens, Athens, Greece
- 7/2009- 5/2015    **Senior Investigator**, Institute of Biosciences and Applications, NCSR Demokritos, Athens, Greece
- 12/2005- 7/2009    **Investigator**, Institute of Biology, NCSR Demokritos, Athens, Greece
- 10/2006            Visiting scientist, Dr Vassilis I. Zannis' lab, Molecular Genetics Unit, Whitaker Cardiovascular Institute, Department of Medicine, Boston University Medical School, Boston, MA, USA
- 6-11/2005          **Instructor of Medicine**, Boston University Medical School, Boston, MA
- 8/2000- 6/2005    **Research Assistant (Postdoctoral researcher)**, Dr Vassilis I. Zannis' lab, Molecular Genetics Unit, Whitaker Cardiovascular Institute, Department of Medicine, Boston University Medical School, Boston, MA, USA
- 1/2005              Visiting scientist, Dr. Matti Jauhiainen's lab, National Public Health Institute, Department of Molecular Medicine, Biomedicum, Helsinki, Finland
- 7- 12/2003         Research Assistant (Postdoctoral researcher), Dr Monty Krieger' lab, Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, USA
- 10-11/2000        Visiting scientist, Dr. Arnold von Eckardstein's lab, Institute of Clinical Chemistry and Laboratory Medicine, University of Munster, Munster, Germany
- 2000                **Ph.D.** in Chemistry, Biochemistry Laboratory, Department of Chemistry, University of Athens, Athens, Greece
- 6-8/1999          Visiting scientist, Dr. Dipak Ramji' s lab, Biochemistry Unit of Cardiff School of Biosciences, Cardiff University, Cardiff, Wales, UK
- 1996                **M.Sc.** in Biochemistry, Department of Chemistry, University of Athens, Athens, Greece
- 1994                **B.Sc.** in Chemistry, Department of Chemistry, University of Athens, Athens, Greece

**Scholarships/ Awards/ Honors**

2020	Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease research proposal award
2015	“Georgios Tsitouris” award for best research proposal, Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease
2012	Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease research proposal award
2010	Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease research proposal award
2009	<b>L'ORÉAL-UNESCO Greek Award for Women in Science</b>
2005	Finalist for the Irvine H. Page Young Investigator Research Award, 6 <sup>th</sup> Annual Conference on Arteriosclerosis, Thrombosis and Vascular Biology, American Heart Association, USA
2004	First Place Winner of the Evans Medicine Research Days Abstract Competition, Department of Medicine, Boston University School of Medicine, Boston, MA, USA.
2002, 2003	Research Award for poster presentation in the 4 <sup>th</sup> and 5 <sup>th</sup> Research Symposium of the New England Hellenic Medical and Dental Society, Boston, MA, USA.
1998	Youth Travel Fund award for participation in FEBS Summer School "New strategies and Methods in Protein research", Urbino, Italy.
1994	Department of Chemistry, University of Athens, Greece: Highest ranking among my graduating class
1992, 1993	Greek Scholarship Foundation award for excellence in undergraduate studies.

**Teaching experience and related activities**

2015-2017	Visiting Professor, Main Instructor of the undergraduate course “Biochemistry I” (6 <sup>th</sup> semester), 26h of lectures, 180 students, Department of Chemistry, University of Athens, Greece
2018 - now	Member of the Inter-Departmental Committee and faculty in the joined MSc Programme “Applied Biochemistry: Clinical Chemistry, Biotechnology, Evaluation of Pharmaceutical Products” of the Department of Chemistry of the University of Patras and of the Institute of Biosciences and Applications of NCSR Demokritos
2019 - now	Guest lecturer in graduate course “Clinical Chemistry”, “Clinical Chemistry-Molecular Diagnostics” Graduate Program, Faculties of Biology, Chemistry and Nursing, University of Athens
2010-2018	Guest lecturer in graduate course “Clinical Chemistry II”, “Clinical Chemistry” Graduate Program, Department of Chemistry, University of Athens
2008-2014	Guest lecturer in graduate course “Human Biochemistry”, “Biochemistry” Graduate Program, Department of Chemistry, University of Athens
2013	Guest lecturer in the 2 <sup>nd</sup> semester of Graduate Program “Molecular and Applied Physiology”, School of Medicine, University of Athens
2013	Guest lecturer in the graduate Program “Applied Nutrition and Dietetics”, Department of Nutrition and Dietetics, Harokopio University
2008	Guest lecturer in graduate course “Chemistry and Biochemistry of Lipids”, “Biochemistry” Graduate Program, Department of Chemistry, University of Athens
1995-1999	Teaching Assistant, Department of Chemistry, University of Athens, Greece
2009 - now	Member of 7 PhD Thesis Examination Committees; Member of 8 Msc Thesis

**Examination Committees**

2010 - now	Person in charge for education issues in the Institute of Biosciences and Applications (IBE). Member of the Education Committee of NCSR Demokritos
2007-2010	Member of the Education Committee, Institute of Biology, NCSR Demokritos
2006-2007	Member of the Fellowship Examination Committee for graduate students, Institute of Biology, NCSR Demokritos
2009	Instructor for the graduate course “Cell signaling”, Institute of Biology, NCSR Demokritos
2011	Lecturer in 1 <sup>st</sup> Summer School “Proteins: from gene to structure and beyond...” organized by the Department of Biology, University of Athens
2006, 2008-2010, 2012, 2014-2019, 2021	Lecturer in annual Summer School organized by NCSR Demokritos on current advances in natural sciences and technology.

**Supervision of research****Postdoctoral fellows**

Vassiliki Skamnaki (2007-2009), Ioannis Dafnis (2012-2020), Faye Soukou (2013-2015), Maria Katsarou (2013-2016), Evgenia Megalou (2014-2015), Christina Raftopoulou (2014-2015), Angeliki Bourtsala (2018-2019), Christina Gkolfinopoulou (2019- ), Maria Karanikou (2020- 2021).

**Doctoral theses**

2020-	Anastasia-Georgia Dedemadi, «Study of composition and function of high density lipoprotein (HDL) in pathological conditions: enhancement of atheroprotective functions of HDL by small molecules» Department of Chemistry, University of Athens
2019-	Achilleas Papayannis, “Association between high density lipoprotein functionality and acute ischemic stroke severity and outcome”, Department of Medicine, Aristotle University of Thessaloniki
2017-	Christina Mountaki, “Role of apolipoprotein E in the pathogenesis of Alzheimer’s disease: effect of naturally occurring compounds on the structure and function of apoE”, Department of Chemistry, University of Athens
2014-2019	Christina Gkolfinopoulou, “Structural and functional characterization of naturally occurring apoA-I mutants - analysis of HDL atheroprotective properties”, Department of Chemistry, University of Athens
2011-2016	Letta Argyri, “Structure-function relationship of human apolipoproteins: ApoE4 and Alzheimer’s disease”, Department of Chemistry, University of Athens
2009-2013	Georgios Daniil, “Role of various proteins (apoA-I, cholesterol transporters, enzymes) of the high-density lipoprotein (HDL) pathway”, Department of Chemistry, University of Athens
2007-2011	Ioannis Dafnis, “Structure-function relationship of apolipoprotein E in brain”, Department of Chemistry, University of Athens

**Master theses**

2020-2022	Asimina Micha, «Relationship between apolipoprotein E4 and lipid transport in the brain with Alzheimer's disease»
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- Interdepartmental Postgraduate Program "Clinical Biochemistry-Molecular Diagnostics", University of Athens
- 2017-2019 Konstantina Katrini, "Analysis of the antioxidant properties of HDL from patients that suffered acute ischemic stroke and association of HDL antioxidant properties with the severity and outcome of stroke", Department of Chemistry, University of Athens
- 2016-2017 Christina Mountaki, "Role of apolipoprotein E isoforms in regulation of neuronal cholesterol efflux and amyloid-beta peptide generation", Department of Chemistry, University of Athens
- 2011-2014 Christina Gkolfinopoulou, "Role of hydrophobic amino acid residues located in the carboxyl-terminus of apolipoprotein A-I on protein's structure and function", Department of Chemistry, University of Athens
- 2007-2009 Georgios Daniil, "Analysis of Composition and Functions of HDL from Patients with Familial Low and High HDL Syndromes. Study of Interactions of Apolipoprotein A-I with the ABCG1 Cholesterol Transporter", Department of Chemistry, University of Athens
- 2006-2007 Georgios Michas, "Analyses of HDL composition and functions in Greek patients who survived myocardial infarction before the age of 36 years and in mouse models", School of Medicine, University of Crete

#### Diploma theses

- 2021- Lydia Voulgari, "Analysis of high density lipoprotein (HDL) function in Alzheimer's disease", Department of Chemistry, University of Athens
- 2017-2018 Christiana Moutzouvi, "Expression of the bioengineered apoE4 mutant apoE4[R189A] and analysis of the effect of mutation on the structure and function of apoE4." Department of Chemistry, University of Athens
- 2016 Angeliki Letsiou, "Expression and purification of recombinant human apolipoprotein A-I - Examination of the amyloidogenic propensity of the natural occurring apolipoprotein A-I point mutant apoA-I[A164S] that is associated with increased risk for myocardial infarction." Department of Chemistry, University of Athens
- 2016 Nefeli Boni-Kazantzidou, "Expression and purification of recombinant human apolipoprotein E3 - Examination of the amyloidogenic propensity of natural occurring apolipoprotein E3 point mutants associated with lipoprotein glomerulopathy." Department of Chemistry, University of Athens
- 2012 Dionyssi Yannimaras, Chrissa Nikolopoulou, "Expression and purification of recombinant human apolipoprotein A-I. Effect of proinflammatory factor PAF in cholesterol efflux from proadipocytes." Department of Chemistry, University of Athens
- 2011 Christina Gkolfinopoulou, Christos Balis, "Effect of proinflammatory factors in cholesterol efflux from macrophages." Department of Chemistry, University of Athens
- 2008-2009 Alexia Phedonos, "Role of lipids and lipid metabolism proteins in atherosclerosis and Alzheimer's disease. Analyses of composition and properties of HDL obtained from family subjects carrying ABCA1 mutations." Department of Biology and Biochemistry, University of Bath, UK

**Peer-reviewer experience**

- 2008 - now Reviewer for scientific journals: Neurobiology of Disease, BBA-Molecular and Cell Biology of Lipids, BBA - Molecular Basis of Disease, BBA-Biomembranes, BBA-General Subjects, Journal of Lipid Research, Atherosclerosis, Scientific Reports, Frontiers in Neurology, Frontiers in Molecular Biosciences PLOS ONE, Annals of Rheumatic Diseases, Clinica Chimica Acta, Bioscience Reports, ACS Chemical Neuroscience, Journal of Inflammation Research, Cells, British Journal of Pharmacology, Neurochemistry International, Kidney International, Pharmaceutical Medicine, Lipids, Neuronal Signaling, Reviews in the Neurosciences, Journal of Biomedicine and Biotechnology, Angiology, Life Sciences, Journal of Lipids, International Journal of Molecular Sciences, Obesity Medicine, Molecular Genetics and Genomic Medicine, BMC Bioinformatics, Current Bioinformatics, Computational and Structural Biotechnology Journal, Journal of Functional Foods
- 2021 Reviewer of grant proposals under the scheme “IDEAS-Serbia Accelerating Innovation and Growth Entrepreneurship Project” funded by the Science Fund of the Republic of Serbia. 2 proposals, budget: 200.000-300.000 euros
- 2021 External evaluator of grant proposals under the scheme “Business partnerships with research and dissemination organizations in the Specialization Sectors of RIS3 of the Ionian Islands Region” funded by the Ionian Islands Region. 1 proposal, budget: 580.000 euros
- 2020 Reviewer of grant proposals under the scheme “Establishment of (potential) business groups of the European Innovation Partnership for the productivity and sustainability of agriculture” in Peloponnese Region funded by the Ministry of Agricultural Development and Food of Greece. 1 proposal, budget: 5.000 euros
- 2020 Reviewer of grant proposals under the scheme “Establishment of (potential) business groups of the European Innovation Partnership for the productivity and sustainability of agriculture” in Attica Region funded by the Ministry of Agricultural Development and Food of Greece. 3 proposals, budget: 5.000 euros
- 2019 Reviewer of grant proposals under the scheme “Support of researchers and specifically of young researchers-2<sup>nd</sup> Call” funded by the Ministry of Education of Greece. 1 proposal, budget: 45.500 euros
- 2019 Reviewer of applications for Postdoctoral Research Scholarships offered by the State Scholarships Foundation (IKY)
- 2018 Reviewer of grant proposals under the scheme “New hypotheses in basic research” funded by the Fondation Alzheimer, France. 3 proposals, budget: 100.000-156.000 euros
- 2018 Reviewer of applications for Doctorate Scholarships offered by the State Scholarships Foundation (IKY)
- 2017 Reviewer of grant proposals under the scheme “Support of researchers and specifically of young researchers” funded by the Ministry of Education of Greece. 5 proposals, budget: 40.000-70.000 euros
- 2014 Reviewer of proposals submitted for the postdoctoral fellowship program of William Harvey International Translational Research Academy (WHRI-ACADEMY)
- 2014 Reviewer of grant proposals submitted under the Czech-Norwegian Research Programme operated by the Ministry of Education, Youth and Sports of the Czech Republic in cooperation with the Research Council of Norway, 2 proposals, budget: 400.000; 1.100.000 euros

- 2012-2015 Reviewer of progress reports of grants under the scheme “Support of private companies to hire highly qualified scientific personnel”, funded by General Secretariat of Research and Technology of Greece, 1 proposal, budget: 261.360 euros
- 2008 Reviewer of grant proposals under the scheme “Complex Projects for the Researchers' Reinstatement” of the Romanian National University Research Council, 1 proposal, budget: 1.406.537 euros

### **Other Academic and Outreach Activities**

- 2022- Editorial board member, *Atherosclerosis Plus*, Elsevier
- 2022- Associate editor, *Frontiers in Genetics*
- 2021 Presentation about my research career and activities in the event GLOBAL WOMEN'S BREAKFAST “Women in Science: Empowering Diversity in Science” organised by IUPAC and the Department of Chemistry of the University of Athens, 9 February 2021
- 2020 Lecture entitled “Contacting literature search in biosciences (Peer-reviewed literature vs “grey” literature, PUBMED, Google Scholar databases) - Information on NCBI databases” presented during the Laboratory workshop for secondary school teachers, organised by the Institute of Biosciences and Applications of NCSR “Demokritos” and the European Learning Laboratory for the Life Sciences (ELLS) of European Molecular Biology Laboratory (EMBL), 11-13 September 2020, Athens, Greece
- 2019 Member of the Organizing Committee of the Insulin-Regulated Aminopeptidase IRAP 2019 international meeting, 27-30 August 2019, Nafplio, Greece
- 2018 Lecture entitled “Molecular mechanisms of atherosclerosis and Alzheimer's disease”, presented during the “Women in Science Classes” meeting organized by L'Oreal Hellas and Hellenic National Commission for UNESCO in the context of the 20<sup>th</sup> anniversary of the international programme L'Oreal-Unesco “For women in Science”, 22 September 2018, Athens
- 2017 Member of the Organizing Committee of the 68<sup>th</sup> Congress of the Hellenic Society of Biochemistry and Molecular Biology, 10-12 November 2017, Athens
- 2014 Host for a Short Term Scientific Mission under COST Action BM0904 for Ms Milica Miljkovic, University of Belgrade, Serbia. Topic of visit: Training on assays for the analysis of HDL subpopulations.
- 2013 Host for a Short Term Scientific Mission under COST Action BM0904 for Dr. Jelena Kotur-Stevuljevic, University of Belgrade, Serbia. Topic of visit: Training on the analysis of antiatherogenic properties of HDL.
- 2011 Organization of 1<sup>st</sup> Working Groups meeting of COST Action BM0904 “HDL: From Biological Understanding to Clinical Exploitation”, 28-29 January 2011, Athens
- 2010-2011 Lead Guest Editor, Special Issue on “Lipids and lipoproteins in atherosclerosis”, *Journal of Lipids*

### **Member of Institutional and other Committees**

- 2020 Member of Special Committee for Research Utilization, NCSR Demokritos
- 2016-2018 Member of the Scientific Board of IBA
- 2011-2014 Member of the Scientific Advisory Board of IBA
- 2010 - now Member of the Education Committee of NCSR Demokritos

-Member of several Committees of NCSR Demokritos (selection of external partners, contract acceptance, tender evaluation for electronic open international equipment procurement, evaluation of objections and appeals for public procurement tenders)

-Member of the Evaluation Committee for the recruitment or promotion of Researchers or University Teaching and Research Staff of NCSR Demokritos, University of Athens, University of Thessaly University of Ioannina, University of West Attica, University of Peloponnese

-Alternate Member of the General Assembly of the Hellenic Foundation for Research and Innovation

### **Participation in Scientific Organizations**

2007-	Hellenic Atherosclerosis Society. Since 2012, member of the Management Committee of Study Group of the Pathophysiology of Atherosclerosis <b>Currently, President of the Management Committee of Study Group of the Pathophysiology of Atherosclerosis</b>
2005-	Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease
2004-2006	American Heart Association/ Council on Arteriosclerosis, Thrombosis and Vascular Biology
1996-	Hellenic Society of Biochemistry and Molecular Biology
1995-	Hellenic Society for Biological Sciences
1994-	Association of Greek Chemists

### **Current Research Interests**

- Elucidation of the interactions between apolipoprotein A-I and other proteins of the high-density lipoprotein (HDL) pathway. Functional characterization of HDL obtained from individuals with high and low HDL syndromes, cardiovascular events or chronic inflammatory diseases.
- Elucidation of the structure-function relationship of apolipoprotein E and its role to dyslipidemia.
- Role of brain apolipoprotein E and cholesterol homeostasis in Alzheimer's disease

### **Invited talks**

- Molecular mechanisms of apolipoproteins A-I and E role in dyslipidemia, atherogenesis and Alzheimer's disease.* Seminar series, Institute of Radioisotopes and Radiodiagnostic Products, NCSR "Demokritos", May 4, 2006, Athens.
- Role of apoA-I in the biogenesis of HDL and in lipid homeostasis.* Round table on «Obesity, Metabolic Syndrome and Cardiovascular Disease», 10<sup>th</sup> Meeting of the Hellenic Society of Lipidology and Atherosclerosis, May 26-27, 2006, Athens.
- Lipids and lipoproteins: From atherosclerosis to Alzheimer's disease.* Round table on «Biological Chemistry of Cardiovascular System», CARDIO Athena 2007, International Meeting on Cardiovascular Medicine, March 16-17, 2007, Athens.
- Molecular mechanisms of high-density lipoprotein (HDL) biosynthesis and plasma lipid homeostasis.* Round table on "Pathophysiology of Atherosclerotic Disease", 2nd Meeting of the working groups of the Hellenic Atherosclerosis Society, November 30-December 1, 2007, Athens.
- Molecular mechanisms of high-density lipoprotein (HDL) biosynthesis: Lessons learned from gene transfer studies in mouse models.* 30<sup>th</sup> Hellenic Society for Biological Sciences Congress, May 22-24, 2008, Thessaloniki.
- Carboxy-terminal truncated apolipoprotein E4 promotes intracellular accumulation of amyloid peptide beta 42 in neuronal cells.* Symposium to honor Professor Emeritus Vassilis I. Zannis, University of Crete Medical School, October 16, 2009, Herakleio.
- The role of apolipoprotein E in the pathogenesis of Alzheimer's disease.* Seminar Series, Chemistry Department, University of Athens, February 8, 2010, Athens.

- 8) *Molecular basis of the role of apolipoprotein E in the pathogenesis of Alzheimer's disease.* Invited speaker seminar series, University of Patras Medical School, April 4, 2012, Patra.
- 9) *Unraveling the connection between apolipoprotein E and Alzheimer's disease.* 63<sup>rd</sup> Congress of the Hellenic Society of Biochemistry and Molecular Biology, November 9 2012, Heraklio Crete.
- 10) *The role of apolipoprotein E in the pathogenesis of human diseases (type III hyperlipoproteinemia, lipoprotein glomerulopathy, Alzheimer's disease).* Seminar series, Institute of Biology, Medicinal Chemistry & Biotechnology, National Hellenic Research Foundation, February 13, 2013, Athens.
- 11) *Disorders of HDL metabolism pathway: causes and clinical phenotypes.* Round table on "Newer developments in genetics of cardiovascular disease", 16<sup>th</sup> Meeting of the Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease, 3-5 October 2013, Athens.
- 12) *HDL atheroprotective properties: quantity, quality and therapeutic approaches.* 5<sup>th</sup> Meeting of the working groups of the Hellenic Atherosclerosis Society, 29-30 November 2013, Athens
- 13) *Study of apoE4 mutations as a tool for understanding Alzheimer's disease pathogenesis.* Department of Biochemistry and Biotechnology, University of Thessaly, 14 May 2014, Larissa.
- 14) *Implication of apoE4 at the early events of Alzheimer's disease: clues from structure and function analysis of apoE4 proteolytic fragments and hereditary mutations.* 2014 Seminar Series, Center of clinical research, experimental surgery and translational research, Biomedical Research Foundation of the Academy of Athens, 21 May 2014, Athens.
- 15) *HDL: From the understanding of its biological role to the clinical use for the diagnosis and treatment of cardiovascular disease and other diseases.* 6<sup>th</sup> Meeting of the working groups of the Hellenic Atherosclerosis Society, 4-5 December 2015, Athens
- 16) *Alzheimer's disease and apolipoprotein E gene: risk and mechanisms for disease development.* Seminar series, NCSR Demokritos, 6 December 2016, Athens.
- 17) *HDL-cholesterol: reappraisal of its clinical significance.* 7<sup>th</sup> Meeting of the working groups of the Hellenic Atherosclerosis Society, 1-2 December 2017, Athens.
- 18) *Apolipoprotein E structural properties: insights into function and pathogenesis of human diseases.* 9<sup>th</sup> International Conference of the Hellenic Crystallographic Association, 5-7 October 2018, Patra
- 19) *Elucidation of the relationship between apolipoprotein A-I/HDL and cardiovascular risk.* Athenian Days of Lipidology, Atherosclerosis and Vascular Disease, 3-5 October 2019, Athens
- 20) *HDL-Cholesterol: Reassessing its Clinical Significance.* Webinar series on "Mechanisms of induction and progression of atherosclerosis - Recent data" organized by the Working Group on the Study of Pathophysiology of Atherosclerosis of the Hellenic Atherosclerosis Society, 30 March 2020

### **Peer-reviewed publications**

- 66) Valanti E. K., Dalakoura-Karagkouni K., Fotakis P., Vafiadaki E., Mantzoros C. S., **Chroni A.**, Zannis V., Kardassis D. and Sanoudou D. Reconstituted HDL-apoE3 promotes endothelial cell migration through ID1 and its downstream kinases ERK1/2, AKT and p38 MAPK. *Metabolism* 127, 154954 (2022).
- 65) **Chroni A.**, Thymiakou E. and Kardassis D. Genetics and regulation of HDL metabolism. *Biochim. Biophys. Acta Mol. Cell. Biol. Lipids* 1867, 159060 (2022).
- 64) Mountaki C., Dafnis I., Panagopoulou E. A., Vasilakopoulou P. B., Karvelas M., Chiou A., Karathanos V. T. and **Chroni A.** Mechanistic insight into the capacity of natural polar phenolic compounds to abolish Alzheimer's disease-associated pathogenic effects of apoE4 forms. *Free Radic. Biol. Med.* 171, 284-301 (2021).

- 63) Gkolfinopoulou C., Soukou F., Dafnis I., Kellici T. F., Sanoudou D., Mavromoustakos T., Stratikos E. and **Chroni A.** Structure-function analysis of naturally occurring apolipoprotein A-I L144R, A164S and L178P mutants provides insight on their role on HDL levels and cardiovascular risk. *Cell. Mol. Life Sci.* 78, 1523-1544 (2021).
- 62) **Chroni A.**, Rallidis L., Vassou D., Gkolfinopoulou C., Papakosta P., Zervou M. I., Goulielmos G. N., Kiouri E., Pappa D., Eliopoulos E. and Kardassis D. Identification and characterization of a rare variant in apolipoprotein A-IV, p.(V336M), and evaluation of HDL functionality in a Greek cohort with extreme HDL cholesterol levels. *Arch Biochem. Biophys.* 696, 108655 (2020).
- 61) Gkolfinopoulou C., Bourtsala A. and **Chroni A.** Structural and functional basis for increased HDL-cholesterol levels due to the naturally occurring V19L mutation in human apolipoprotein A-I. *Biochim. Biophys. Acta Mol. Cell. Biol. Lipids* 1865, 158593 (2020).
- 60) Kavetsou E., Katopodi A., Argyri L., Chainoglou E., Pontiki E., Hadjipavlou-Litina D., **Chroni A.** and Detsi A. Novel 3-aryl-5-substituted-coumarin analogues: Synthesis and bioactivity profile. *Drug Dev. Res.* 81, 456-469 (2020).
- 59) Divolis G., Stavropoulos A., Manioudaki M., Apostolidou A., Doulou A., Gavriil A., Dafnis I., **Chroni A.**, Mummery C., Xilouri M. and Sideras P. Activation of both TGF $\beta$  and BMP signaling pathways upon traumatic brain injury restrains pro-inflammatory and boosts tissue reparatory responses of reactive astrocytes and microglia. *Brain Commun.* 1, fcs028 (2019).
- 58) Tziomalos K., Katrini K., Papagianni M., Christou K., Gkolfinopoulou C., Angelopoulou S. M., Sofogianni A., Savopoulos C., Hatzitolios A. I. and **Chroni A.** Impaired antioxidative activity of high-density lipoprotein is associated with more severe acute ischemic stroke. *Metabolism* 98, 49-52 (2019).
- 57) Valanti E. K., **Chroni A.** and Sanoudou D. The future of apolipoprotein E mimetic peptides in the prevention of cardiovascular disease. *Curr. Opin. Lipidol.* 30, 326-341 (2019).
- 56) **Chroni A.\*** and Kardassis D.\* HDL dysfunction caused by mutations in apoA-I and other genes that are critical for HDL biogenesis and remodelling. *Curr. Med. Chem.* 26, 1544-1575 (2019).  
\* corresponding author
- 55) Katsarou M., Stratikos E. and **Chroni A.** Thermodynamic destabilization and aggregation propensity as the underlying mechanism behind the genetic association of apoE3 mutants and Lipoprotein Glomerulopathy. *J. Lipid Res.*, 59, 2339-2348 (2018).
- 54) Nissilä E., Hakala P., Leskinen K., Roig A., Syed S., van Kessel K. P. M., Metso J., de Haas C. J. C., Saavalainen P., Meri S., **Chroni A.**, van Strijp J. A. G., Öörni K., Jauhainen M., Jokiranta T. S. and Haapasalo K. Complement Factor H and Apolipoprotein E Participate in Regulation of Inflammation in THP-1 Macrophages. *Front. Immunol.* 9, 2701 (2018).
- 53) Dafnis I., Argyri L. and **Chroni A.** Amyloid-peptide  $\beta$  42 enhances the oligomerization and neurotoxicity of apoE4: the C-terminal residues Leu279, Lys282 and Gln284 modulate the structural and functional properties of apoE4. *Neuroscience* 394, 144-155 (2018).
- 52) Bourtsala A., Dafnis I. **Chroni A.**, Farmaki T. and Galanopoulou D. Study of the involvement of phosphatidic acid formation in the expression of wound-responsive genes in cotton. *Lipids* 53, 589-599 (2018).
- 51) Dafnis I., Raftopoulou C., Mountaki C., Megalou E., Zannis V. I. and **Chroni A.** ApoE isoforms and carboxyl-terminal truncated apoE4 forms affect neuronal BACE1 levels and A $\beta$  production independently of their cholesterol efflux capacity. *Biochem J.* 475, 1839-1859 (2018).
- 50) Prasinou P., Dafnis I., Giacometti G., Ferreri C., **Chroni A.** and Chatgililoglu C. Fatty acid-based lipidomics and membrane remodeling induced by apoE3 and apoE4 in human neuroblastoma cells. *Biochim. Biophys. Acta Biomembr.*, 1859, 1967-1973 (2017)
- 49) Kavetsou E., Gkionis L., Galani G., Gkolfinopoulou C., Argyri L., Pontiki E., **Chroni A.**, Hadjipavlou-Litina D. and Detsi A. Synthesis of prenyloxy coumarin analogues and evaluation of their antioxidant, lipoxigenase (LOX) inhibitory and cytotoxic activity. *Med. Chem. Res.*, 26, 856-

866 (2017).

- 48) Dafnis I., Argyri L., Sagnou M., Tzinia A., Tsilibary E. C., Stratikos E. and **Chroni A.** The ability of apolipoprotein E fragments to promote intraneuronal accumulation of amyloid beta peptide 42 is both isoform and size-specific. *Sci. Rep.* 6, 30654 (2016).
- 47) Dafnis I., Metso J., Zannis V. I., Jauhiainen J. and **Chroni A.** Influence of isoforms and carboxyl-terminal truncations on the capacity of apolipoprotein E to associate with and activate Phospholipid Transfer Protein. *Biochemistry*, 29, 5855-66 (2015).
- 46) Ljunggren S.A., Levels J.H., Hovingh K., Holleboom A.G., Vergeer M., Argyri L., Gkolfinopoulou C., **Chroni A.**, Sierts J.A., Kastelein J.J., Kuivenhoven J.A., Lindahl M., Karlsson H. Lipoprotein profiles in human heterozygote carriers of a functional mutation P297S in scavenger receptor class B1. *Biochim. Biophys. Acta*, 1851, 1587-95 (2015).
- 45) Haapasalo K., van Kessel K., Nissilä E., Metso J., Johansson T., Miettinen S., Varjosalo M., Kirveskari J., Kuusela P., **Chroni A.**, Jauhiainen M., van Strijp J., Jokiranta T.S. Complement Factor H Binds to Human Serum Apolipoprotein E and Mediates Complement Regulation on High Density Lipoprotein Particles. *J. Biol. Chem.*, 290, 28977-87 (2015).
- 44) Tiniakou I., Georgopoulos S., **Chroni A.**, van Eck M., Fotakis P., Zannis V.I. and Kardassis D. Natural human apoA-I mutations L141RPisa and L159RFIN alter HDL structure and functionality and promote atherosclerosis development in mice. *Atherosclerosis*, 243, 77-85 (2015).
- 43) Gkolfinopoulou C., Stratikos E., Theofilatos D., Kardassis C., Voulgari P.V., Drosos A.A. and **Chroni A.** Impaired antiatherogenic functions of high-density lipoprotein in patients with ankylosing spondylitis. *J. Rheumatol.*, 42, 1652-60 (2015).
- 42) Favari E., **Chroni A.**, Uwe JF Tietge U. J. F., Zanotti I., Escolà-Gil J. C., Bernini F. Cholesterol efflux and reverse cholesterol transport. *Handb. Exp. Pharmacol.*, 224, 181-206 (2015).
- 41) Davalos A.\* and **Chroni A.\*** Antisense oligonucleotides, microRNAs and antibodies. *Handb. Exp. Pharmacol.*, 224, 649-89 (2015). \* corresponding author
- 40) Zannis V. I., Fotakis P., Koukos G., Kardassis D., Ehnholm C., Jauhiainen J. and **Chroni A.** HDL biogenesis and remodeling. *Handb. Exp. Pharmacol.*, 224, 53-111 (2015).
- 39) Zvintzou E., Skroubis G., **Chroni A.**, Petropoulou P. I., Gkolfinopoulou C., Sakellaropoulos G., Gantz D., Mihou I., Kalfarentzos F. and Kypreos K. E. Effects of bariatric surgery on HDL structure and functionality: results from a prospective trial. *J Clin Lipidol.*, 8, 408-17 (2014).
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### **Book chapters/editorials**

- 1) **Chroni A.**, Leondaritis G. and Karlsson H. Lipids and lipoproteins in atherosclerosis. *J. Lipids*, 2011, 160104 (2011).
- 2) Zannis V. I., Zanni E. E., Papapanagiotou A., Koukos G., Kardassis D., Fielding C. J. and **Chroni A.** ApoA-I functions and synthesis of HDL. “*High-Density Lipoproteins. From Basic Biology to Clinical Aspects*”, Wiley-VCH, Weinheim (Fielding C. J. Editor), ch. 11, pp. 267-306 (2007).
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### **Funding**

- 1) 2006-2008, European Union-Marie Curie International Reintegration Grants  
“Functional interactions of apolipoprotein E with the ABCA1 lipid transporter and the SR-BI HDL receptor that affect cholesterol homeostasis in circulation and brain.”  
Principal Investigator, 68.500 euros
- 2) 2006-2008, Institute of Biology. NCSR Demokritos internal grant award  
“Role of cholesterol and proteins (apolipoprotein E, ABCA1 lipid transporter, SR-BI receptor) that affect brain cells cholesterol homeostasis in the pathogenesis of Alzheimer’s disease.”  
Coordinator, 3.000 euros
- 3) 2007-2009, European Union-Specific Targeted Research Project, 7 partners  
“Functional genomics of inborn errors and therapeutic interventions in high density lipoprotein (HDL) metabolism.”  
Principal Investigator, 280.000 euros
- 4) 2010-2014, European Union-COST Action  
“HDL - From Biological Understanding to Clinical Exploitation.”  
Member of the Management Committee
- 5) 2011-2014, General Secretariat for Research and Technology of Greece, “Cooperation” grant  
“Targeted strategies for new treatment approaches for cardiovascular and inflammatory diseases based on the protective functions of high density lipoprotein (HDL)”  
Principal Investigator, 100.400 euros
- 6) 2010-2011, Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease  
“Study of functional interactions between HDL and cholesterol transporter ABCG1 - Role in inflammation and atherosclerosis”  
Coordinator, 8.000 euros
- 7) 2011-2012, Hellenic Atherosclerosis Society

- “Apolipoprotein E mutations and hereditary Lipoprotein Glomerulopathy: mechanism of pathogenesis and diagnostic value”  
Coordinator, 5.000 euros
- 8) 2012-2015, Ministry of Education and Religious Affairs of Greece, “Thalis” grant  
“Structure-function relationship, regulation and genetic variation in High Density Lipoproteins: Prospects for the prevention and therapy of Coronary Artery Disease (HDL bio-therapies)”  
Principal Investigator, 125.000 euros
- 9) 2012-2013, Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease  
“Role of apolipoprotein E mutants in the pathogenesis of hereditary Lipoprotein Glomerulopathy”  
Coordinator, 5.000 euros
- 10) 2012-2015, General Secretariat for Research and Technology of Greece, “Excellence” grant  
«Common pathogenetic pathways and mechanisms for connective tissue diseases, Alzheimer’s disease and diabetes that induce cellular apoptosis”  
Team member
- 11) 2012-2015, General Secretariat for Research and Technology of Greece, “Funding retained ERC proposals”  
“Selection of antigenic peptides by aminopeptidases”  
Team member
- 12) 2013, Hellenic Society for Rheumatology  
“Study of changes in atheroprotective properties of High Density Lipoprotein (HDL) from patients with ankylosing spondylitis”  
Coordinator, 2.000 euros
- 13) 2014-2015, General Secretariat for Research and Technology of Greece, “Excellence II” grant  
“Unraveling the connection between brain apolipoprotein E, cholesterol homeostasis and Alzheimer's disease”  
Coordinator, 178.000 euros
- 14) 2015-2016, Hellenic Society of Lipidology, Atherosclerosis and Vascular Disease  
“Natural human apolipoprotein A-I mutations, alterations in HDL atheroprotective properties and increased cardiovascular risk”  
Coordinator, 6.000 euros
- 15) 2016-2018, Harry J. Lloyd Charitable Trust  
“Modulating neoantigen epitope generation for melanoma immunotherapy”  
Team member
- 16) 2016-2017, State Scholarships Foundation (IKY) Fellowships of Excellence for Postdoctoral Research - Siemens Program. Postdoctoral fellow: Ioannis Dafnis  
“Elucidation of mechanism of function of carboxyl-terminal truncated apoE4 form, apoE4[Δ(166-299)], in the pathogenesis of Alzheimer’s disease”  
Coordinator, 30.000 euros
- 17) 2017-2019, Hellenic Atherosclerosis Society  
“Prognostic value of HDL function in patients with acute ischemic stroke”  
Coordinator, 3.000 euros
- 18) 2018-2021, Ministry of Economy and Development of Greece/ NSRF 2014-2020, «Reinforcement of the Research and Innovation Infrastructure» grant  
«OPENSREEN-GR: An open-access research infrastructure of target-based screening technologies and chemical biology for human and animal health, agriculture and the environment»  
Member of the three persons committee for preparation and submission of proposal

- Team member for partner NCSR Demokritos, lab funding: 42.000 euros
- 19) 2018-2021, Ministry of Economy and Development of Greece/ NSRF 2014-2020, «Reinforcement of the Research and Innovation Infrastructure» grant  
«BIOIMAGING-GR: A Greek Research Infrastructure for Visualizing and Monitoring Fundamental Biological Processes»  
Team member for partner NCSR Demokritos, lab funding: 2.000 euros
  - 20) 2018-2022, Ministry of Economy and Development of Greece/ NSRF 2014-2020, «Reinforcement of the Research and Innovation Infrastructure» grant  
«The National Research Infrastructures on Integrated Structural Biology, Drug, Screening, Efforts and Drug Target Functional Characterization-INSPIRED»  
Team member for partner NCSR Demokritos, lab funding: 16.700 euros
  - 21) 2018-2020, Ministry of Education and Religious Affairs of Greece & Ministry of Economy and Development of Greece/ NSRF 2014-2020, “Supporting researchers with an emphasis on young researchers” grant  
“High Density Lipoprotein (HDL) Structure, Function and Dysfunction: Prospects for New Diagnostic and Therapeutic Approaches for Cardiovascular Disease”  
Coordinator, 40.600 euros
  - 22) 2018-2021, Ministry of Economy and Development of Greece/ NSRF 2014-2020, “RESEARCH-CREATE-INNOVATE” grant, 4 partners  
“Complementary neuroprotective action of currant as a natural dietary supplement. Highlighting the mechanisms of action of currant using animal models of neurodegenerative diseases.”  
Principal Investigator, 188.000 euros
  - 23) 2019-2021, General Secretariat for Research and Innovation, Flagship national initiative for creating research networks in the value chains of "Olive", "Vineyard", "Honey" and "Livestock", NSRF 2014-2020  
“The Routes of Bee”  
Team member for partner NCSR Demokritos, lab funding: 3.000 euros
  - 24) 2020-2022, Ministry of Economy and Development of Greece/NSRF 2014-2020 “RESEARCH-CREATE-INNOVATE” grant, 4 partners  
“New therapies aiming to improve the atheroprotective and immunomodulatory properties of HDL for the treatment of autoimmune and cardiovascular diseases”  
Coordinator, 250.000 €
  - 25) 2021-2024, European Commission, H2020, Marie Skłodowska-Curie Innovative Training Networks (ITN), 10 partners  
“Training experts in antigen processing to deliver new drug prototypes for cancer and autoimmune diseases” (CAPSTONE)  
Deputy Scientific Supervisor in NCSR Demokritos, 486.035,28 € for NCSR Demokritos
  - 26) 2021-2023, Hellenic Foundation for Research & Innovation (ELIDEK), Action “Science and Society”, “Research, Innovation and Dissemination Hubs”  
“Lifestyle and cardiovascular disease: From pathophysiological mechanisms to clinical practice” (CARDIOLIFE)  
Principal Investigator, 2.800 euros