

Curriculum Vitae: Alexia Victoria Polissidis



Current Affiliations

Assistant Professor of Pharmacology, Biomedical Sciences Program, Department of Science and Mathematics, American College of Greece, since 2022

Collaborating Researcher- Junior Team Leader, Laboratory of Neurodegenerative Diseases, Centre for Clinical, Experimental Surgery, and Translational Research, Biomedical Research Foundation Academy of Athens (BRFAA), since September 2018

Co-founder & CEO Anacalypsis Therapeutics, an Athens-based biotech developing novel therapeutic strategies for neurodegenerative diseases, L. Syggrou 190, Kallithea, since 2019

Professional Contact Information:

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Personal Statement

I have a PhD in Psychopharmacology and am an Assistant Professor of Pharmacology at the American College of Greece as well as an independently-funded Junior Research Team Leader - Collaborating Researcher at the Biomedical Research Foundation Academy of Athens (BRFAA) where I also established (2011) the NeuroBehavior Rodent Phenotyping Facility. My research background is in psychopharmacology, preclinical drug screening and translational neuroscience. I use viral, transgenic, and pharmacological models to study neurodegenerative and neuropsychiatric phenomena. My current research interests include 1) gene-environment interactions and their contribution to the mechanisms of Parkinson's disease (PD) pathogenesis, 2) identification of potential phenotypes or biomarkers to permit early intervention with neuroprotective therapies for PD, and 3) mechanisms underlying the psychotropic and therapeutic effects of cannabinoids and other psychotropic drugs.

Education and Research Training

2018: **Visiting Scholar**, Lab of Prof. Karen Duff, Columbia University (Marie-Curie Actions CROSS NEUROD)- training in optogenetic and chemogenetic (Drug Receptors Exclusively Activated by Designer Drugs (DREADDs)) techniques

2013- 2018: **Postdoctoral Researcher**, Neurodegeneration, Lab of Prof. Leonidas Stefanis, BRFAA

2010-2013: **Postdoctoral Researcher**, Behavioral Neuroscience, Collaborative, BRFAA

2009: **PhD Psychopharmacology**, Dept. of Pharmacology, Medical School, National and Kapodistrian University of Athens (NKUA), Greece, Thesis title: "The role of the CB1 cannabinoid receptor in the behavioural, neurochemical and molecular actions of drugs of abuse"

2004: **Bsc (Honours) Pharmacology**, First class honours. Dept. of Pharmacology, University of Alberta, Canada, Thesis title: "The nutrient-mediated effects of GLP-1 secretion in the NCI-H716 cell line"

Positions and Employment

Date	Position	Affiliation	Funding
09/2022-	Assistant Professor	Biomedical Sciences Program, American College of Greece	n/a
01/2022-present	Post-doctoral Research Associate	PI: Dr. Panos Politis, BRFAA	Research-Create - Innovate T2 EDK
01/2022-04/2022	Part-time Faculty, Lecturer	Biomedical Sciences Program, American College of Greece	n/a
09/2021-12/2021	Post-doctoral Research Associate	Lead PI: Prof. K. Antoniou, Dept. of Pharmacology, University of Ioannina	Research-Create - Innovate T2 EDK
09/2018-	Post-doctoral Research	Lead PI: A. Polissidis, Lab. of	HFRI (ELIDEK)

present	Associate- Junior Team Leader	Neurodegenerative Diseases, BRFAA	independent postdoctoral grant awardee
07/2018	Visiting Scholar	PI: Prof. K. Duff, Taub Institute, Columbia University, New York	CROSS-NEUROD (MSCA RISE)
09/2015-08/2018	Scientific Collaborator (Lecturer), Pharmacology I & II (3 rd year)	School of Medicine, European University of Cyprus, Nicosia, Cyprus	n/a
10/2013-09/2018	Postdoctoral Research Associate	PI: Prof. L. Stefanis, Lab. of Neurodegenerative Diseases, BRFAA	MULTISYN (FP7-HEALTH)
10/2010-06/2013	Collaborating Researcher	Lead PI: Dr. K. Karalis (Researcher A)	TRANSMED (FP7- REGPOT)
05/2017-09/2017	Preclinical Research Consultant	Nugenomics, CEO: Phaethon Psichis	n/a
10/2009-06/2010	Postdoctoral Research Associate	PI: Dr. K. Antoniou, Assistant Professor, Dept. of Pharmacology, Medical School, University of Ioannina, Greece	Special Research Fund Account (ELKE)
01/2006-09/2009	PhD candidate	Supervisors: Profs. C. Spyraiki & Z. Papadopoulou-Daifoti, Dept. of Pharmacology, Medical School, NKUA	PENED2003
2005	Research Associate	PI: Prof. C. Spyraiki, Dept. of Pharmacology, Medical School, NKUA	EPAN YB60, 2005 (G.S.R.T.)
05/2004-07/2004	Research Assistant	PI: Prof. P. Light, Dept. of Pharmacology, University of Alberta, Canada	Dept. of Pharmacology
09/2003-04/2004	Undergraduate Student Research position	PI: Prof. P. Light, Dept. of Pharmacology, University of Alberta, Canada	n/a
06/2003-08/2003	Research Assistant	PI: Prof. Z. Papadopoulou-Daifoti, Dept. of Pharmacology, Medical School, NKUA	Volunteer

Teaching Activity

- 2022- : BMS4435: Pharmacology in Health and Disease, BMS4440: Topics in Pathophysiology, BI 1000 Introduction to Biology, BI 1016 Human Biology, **undergraduate lectures** for the Biomedical Sciences Program, American College of Greece
- 2022: “Experimental models of neurodegenerative diseases”, **postgraduate lecture** for the Master’s Program “Drug design and development” of the Pharmacy School, NKUA
- 2022: “Drug development strategies for neuropsychiatric diseases”, **postgraduate lecture** for the Master’s Program “Drug development” of the Medical School, NKUA
- 2019- : “The pharmacology of nicotine dependence”, **postgraduate lecture** for the Master’s Program “Thoracic oncology: clinical, laboratory and research approaches” of the Medical School, NKUA
- 2018- : **Technical course** (theory and practical) in behavioral neuroscience techniques for the Laboratory Animal Science Certification Seminars at BRFAA
- 2017- : Psychopharmacology (the endocannabinoid system, opioids, hallucinogens), neurobiology of disease (addiction) and technical courses (behavioral neuroscience, rodent brain anatomy), **postgraduate lectures** for the Athens International Master’s Program in Neurosciences, NKUA
- 2017-2019: “Stress and the reward system” and technical course in behavioral neuroscience, **postgraduate lectures** for the “Stress and Health Promotion” Master’s Program of the Medical School, NKUA
- 2017- : Functional Neuroanatomy (introduction to functional neuroanatomy, the endocannabinoid system, reward system, inhibitory amino acids, cholinergics, purinergics), **postgraduate lectures** for the Master’s Program “Applied Neuroanatomy” of the Medical School, NKUA
- 2015-2018: **Course coordinator and primary instructor** for Pharmacology and Therapeutic Procedures I & II (**140 h instruction/academic year**), School of Medicine, European University Cyprus

- 2014- : **Undergraduate lectures** in addiction (cannabis, nicotine) course (3rd and 4th year medical students), Dept. of Pharmacology, Medical School, NKUA

Training Activity

- 01/2023-: **Supervisor of lab-based capstone research project**: “LRRK2 as a Parkinson’s Disease Biomarker”, Georgia Sarakinou, ACG
- 03/2022-04/2022: **Supervisor of graduate research 2-month rotation**, Sofia Dede, BRFAA in collaboration with the Athens International Master’s Program in Neurosciences, NKUA
- 11/2021-: **Supervisor of graduate research project**: “Stress-driven alpha-synuclein brain pathology”- Christina Antoniou, BRFAA in collaboration with the Athens International Master’s Program in Neurosciences, NKUA
- 11/2020- 05/2022: **Supervisor of graduate research project**: “The role of alpha-synuclein in stress- and reward-related behaviors”- Katherine Muksuris, BRFAA in collaboration with the Athens International Master’s Program in Neurosciences, NKUA
- 10/2020-: **Co-supervisor of undergraduate research project** with Dr. Hardy Rideout: “Characterization of an *in vivo* viral mutant-LRRK2 mouse model”- Demetrios Tapeinos-Tantis, BRFAA in collaboration with the Dept. of Biological Applications and Technology, University of Ioannina
- 01/2020- : **Co-supervisor of PhD research project** with Dr. V. Andreakos: “Investigation of co/multimorbidity in experimental animal models of atherosclerosis/CVD or depression”- Effrosyni Koronaiou (University supervisor: Prof. A. Tzioufas)
- 10/2019-05/2021: **Co-Supervisor** with Prof. L. Stefanis of **graduate research project**: “Assessment of chronic stress effects on the hippocampal transcriptome and adult neurogenesis in humanized alpha-synuclein rats”- Katerina Karali, BRFAA in collaboration with the Athens International Master’s Program in Neurosciences, NKUA
- 04/2019-05/2021: **Supervisor of graduate research project**: “The effects of adolescent Δ^9 -THC exposure on adult neurogenesis”- Despoina Miliou, BRFAA in collaboration with the Master’s Program in Applied Neuroanatomy, NKUA
- 2/2019- 10/2019: **Co-supervisor** with Prof. Leonidas Stefanis of **undergraduate research project**: “The effects of chronic corticosterone on the development of a Parkinsonian phenotype in human alpha-synuclein transgenic rats”- Dionysis Palermos, BRFAA in collaboration with the School of Pharmacy, NKUA
- 9/2018- : **Supervisor of PhD research project**: “The role of stress in alpha-synuclein-induced neurodegenerative processes”- Modestos Nakos-Bimpos (University supervisor: Prof. L. Stefanis)
- 9/2018- 11/2019: **Co-Supervisor** with Prof. L. Stefanis of **graduate research project**: “Modulators of alpha-synuclein-mediated neurodegeneration: evaluation of an *in vitro* stress modality on alpha-synuclein transcriptional regulation, expression, accumulation, and aggregation in cultured primary hippocampal neurons derived from wild-type and humanized alpha-synuclein rats”- Sofia Vrettou, BRFAA in collaboration with the Athens International Master’s Program in Neurosciences, NKUA
- 9/2018- 11/2019: **Co-supervisor** with Prof. Leonidas Stefanis of **graduate research project**: “Investigating the role of alpha-synuclein in dopamine-related behaviors”- Effrosyni Koronaiou, BRFAA in collaboration with the Molecular Biomedicine Master’s Program of the NKUA
- 9/2017- : **Co-Supervisor** with Prof. Leonidas Stefanis of **graduate research project**: "Vulnerability of the nigrostriatal dopaminergic system in alpha synuclein based animal models"- Marios Boyongo, BRFAA in collaboration with the Molecular Biomedicine Master’s Program of the NKUA
- 9/2015- 2/2016: **Co-Supervisor** with Prof. Leonidas Stefanis of **graduate research project**: "Behavioral and neurochemical profile of alpha-synuclein transgenic rats: Insights into Parkinson's Disease pathophysiology"- Vasia Kollia, BRFAA in collaboration with the Molecular Medicine Master’s Program of the Medical School, NKUA
- 9/2012- 2/2013: **Co-Supervisor** with Dr. Irimi Skalioura of **two undergraduate research projects**: "Study of cannabinoids’ effects on ERK1 knockout mice"- Sylvia Dimitriou, and "The role of cannabinoids and the signaling kinase ERK1 in cognitive function"- Vicky Kanta, BRFAA in collaboration with the Biology Department, NKUA

- 9/2012- 2/2013: **Co-Supervisor** with Dr. Irini Skaliora of **two undergraduate research projects**: "Study of cannabinoids' effects on ERK1 knockout mice"- Sylvia Dimitriou, and "The role of cannabinoids and the signaling kinase ERK1 in cognitive function"- Vicky Kanta, BRFAA in collaboration with the Biology Department, NKUA
- 2012- : **Co-supervisor** of 5 undergraduate (Vicky Kanta and Sylvia Dimitriadou with Dr. Skaliora, Anita Lygeroudi, Ada Sinani, and Anastasia Lykovardi with Prof. Stefanis) and 1 postgraduate **ERASMUS short-term placement** (Joanna Kowalczyk with Ass. Prof. Christina Dalla)
- 2010- : **Hands-on laboratory training and supervision** of preclinical rodent behavioral assays, HPLC and molecular techniques of over 70 undergraduate and postgraduate level students, BRFAA
- 2006-2009: HPLC **hands-on training** of 15 postgraduate and postdoctoral fellows, Department of Pharmacology, Medical School, NKUA

Other Positions

- 2020-2021: External Advisor for the National Adhoc Committee for Cannabis-related Regulatory Issues (National Organization for Medicines "EOF"), Greece
- 2020: Grant Evaluator for the National Science Center of Poland
- 2018-: European Medicines Agency (EMA) Expert for the Committee for Medicinal Products for Human Use (CHMP)
- 2018-: External Advisor for EOF, Greece
- 2018-2020: External Advisor for the National Committee for Medicinal Cannabis Products (EOF)

Honors, Scholarships, Distinctions and Research Grants

- 2020-2024: HORIZON 2020, Health, demographic change and well-being (60.000 € for equipment)
- 2019-2020: Co-PI, Parkinson's and Movement Disorders Foundation (5.000 USD)
- 2018-2022: PI for Independent Postdoctoral Research Grant: "Exploring the neurodegenerative potential of chronic stress in a human alpha-synuclein overexpression model" (180.000 €)
- 2014: Postdoctoral Fellow Achievement
- 2021: Psychiatry Consortium Early Career Support Grant
- 2014: Postdoctoral Fellow Achievement Award at the 3rd WHBA Summer School
- 2012: Presentation Award at the ECNP Seminar in Neuropsychopharmacology
- 2012: Poster Award at the Hellenic Society for Neuroscience Conference
- 2010: Presentation Award at the Hellenic Society for Neuroscience Conference
- 2008: Presentation Award at the Hellenic Society for Neuroscience Conference
- 2007: Poster Award at the Hellenic Society for Neuroscience Conference
- 2004: Jason Lang Scholarship for Distinction
- 2003-2004: Dean's Honour List
- 2000: Rutherford University Entrance Scholarship
- 2000: University of Alberta Science Faculty Entrance Scholarship

Courses and Seminars

- 5-6/05/2022: Erasmus+ "Share4Brain" Good Practices for Brain Education Final Meeting, Bari, Italy
- 25-26/11/2021: Erasmus+ "Share4Brain" Good Practices for Brain Education November Meeting, Madrid, Spain
- 24-25/2/2021: Psychiatry Consortium, BPS & LASA Joint Workshop: "Exploring the status of animal models of psychiatric disorders - their validity and scope for successful translation", online
- 7-11/10/2017: EURON Workshop "Psychopharmacology from laboratory to clinic", Heraklion, Crete
- 17-25/5/2014: 3rd WHBA School "Medical and Biosciences Research & Management", Mani, Greece
- 23-30/3/2013: FENS-IBRO SfN School 2013 "Synaptic stress and pathogenesis of neuropsychiatric disorders", Bertinoro, Italy
- 8-10/11/2012: ECNP Seminar in Neuropsychopharmacology, Nafplio, Greece.
- 13/7/2012: Satellite event of the 8th FENS forum "The cannabinoid system as a therapeutic target for neurological disorders", Barcelona, Italy

- 11-14/1/2012: Practical Workshop on "Animal Models of Neurodegeneration and Behavioural Tests for Assessment of Motor and Cognitive Function", Hellenic Pasteur Institute, Athens, Greece
- 19-30/9/2011: 5th Course on Laboratory Animal Science at the Alexander Fleming Biomedical Research Sciences Center, Vari, Greece
- Academic year 2007- 2008: Postgraduate courses in Pharmacology, Department of Pharmacology, Medical School, University of Athens
- 11-12/2008: Seminars on "Administration and assessment of research and technology and their integration into the processes of economic and social development", organised by the University of Athens as part of the PENED program

Professional Memberships and Positions in Scientific Societies

- Member of the European Brain and Behaviour Society (EBBS)
- Member of the Federation of European Neurosciences (FENS)
- Member of the Hellenic Society of Biomedical and Laboratory Animal Science (HSBLAS)
- Member of the Governing Council (2017-2019, 2022-2021), Hellenic Society for Neuroscience (HSFN)
- Member of the Hellenic Society of Pharmacology

Invited Presentations at Conferences

1. **Invited speaker**, "Stress system dysregulation drives neurodegenerative phenoconversion in experimental alpha-synuclein-associated Parkinson's disease", *8th Mediterranean Neuroscience Conference Meeting, Dubrovnik, Croatia May 29-June 2, 2022* (cancelled participation due to family obligations)
2. **Invited speaker**, "The Role of Cannabis in Modern Medicine", *HellasPharm Pharmacy Conference, sponsored by Tikun Europe, Athens, Greece 2022*
3. **Invited speaker**, "Cannabis Pharmacology: Pharmacokinetics, Pharmacodynamics & Drug Interactions", *Train-the-trainers: Medical Cannabis Seminar "Basics and beyond", organized by Tikun Europe, Greece, online, 2022*
4. **Co-chair** with Prof. Leonidas Stefanis and Organizer of symposium sponsored by Biogen: "The shape of treatments to come: disease-modifying therapies in neurodegenerative diseases", *28th Meeting of the Hellenic Society for Neuroscience, Heraklion, Crete 2019*
5. **Invited speaker**, "Medical cannabis: back to the future", *98th Panhellenic Pharmaceutical Conference, Athens, Greece, 2019*
6. **Invited speaker**, "Drug interactions between psychiatric drugs and drugs of abuse", *6th Psychopharmacology Congress, Athens, Greece, 2019*
7. **Invited speaker**, "Cannabis: from the dark alleys to the lab bench", *1st Panhellenic Ethnopharmacology Conference, Athens, Greece 2019*
8. **Invited Chair** for the seminar "The role of cannabinoids in the clinic", *CME-certified seminar series of the Scientific Council of Errikos Dunant Hospital Center, Athens, Greece, 2019*
9. **Invited Chair** for the Psychopharmacology Round Table Discussion, "Psychedelics as a treatment of mental health diseases", *4th Cyprus Annual Medical Students Meeting, Nicosia, Cyprus, 2019*
10. **Selected oral presentation**, "A novel "double hit" model of GBA1 microRNA-mediated downregulation and human alpha-synuclein overexpression demonstrates nigrostriatal degeneration in mice", *14th International Conference on Alzheimer's & Parkinson's Diseases, Lisbon, Portugal, 2019*
11. **Invited Speaker** for Workshop title: "Medical Marijuana: Facts & Fiction", *3rd Cyprus Annual Medical Students Meeting, Nicosia, Cyprus, 2018*
12. **Selected oral presentation**, "Behavioral and neurochemical profile of alpha-synuclein transgenic rats: Insights into Parkinson's disease pathophysiology", *27th Meeting of the Hellenic Society for Neuroscience, Athens, Greece, 2017*
13. **Invited speaker**, "Cannabinoid pharmacology: 50 years of progress", *18th Panhellenic Pharmaceutical Conference, Athens, Greece, 2017*
14. **Selected oral presentation**, "Hyperdopaminergic activity following low dose WIN 55,212-2 in the conditioned place preference paradigm", *22nd Hellenic Society for Neuroscience meeting, Athens, Greece, 2008*

15. **Selected oral presentation**, “CB1 antagonism regulates cocaine-induced behavioral and neurochemical effects”, *Neuroscience Days, Hellenic Society for Neuroscience, Athens, Greece, 2010*
16. **Invited speaker**, “The CB1 cannabinoid receptor is implicated in various aspects of memory and learning function”, *3rd Annual Hellenic Cognitive Science Conference, Paros, Greece, 2011*
17. **Selected oral presentation**, “GBA and alpha-synuclein: is it a toxic relationship?”, *Alpha-synuclein and the lysosomes in Parkinson’s disease: a complicated relationship”, Excellence Meeting (Excellence I & II), Athens, Greece, 2015*

Public Activities and Knowledge Transfer

- Chair of the event “Women in Biomedical Sciences”, partially funded by the H.F.R.I and co-organized with the Institute of Stress Biology and Medicine, June 18th 2022
- Organizer & Moderator of the virtual lecture for the lay public: “The Human Brain and Our Universe”, delivered by Prof. G. Chrousos, for “Brain Awareness Week”, 2021
- Participation in the Athens Science Festival for the lay public in Athens, presentation and discussion on drug abuse and the reward system, 2019
- Invited speaker to the event “Medical Cannabis: the misunderstood plant” organized by the Association of Handicapped Persons “Agapi & Elpida”, Koropi City Hall, December 8th, 2018
- Participation in the “Brain Awareness Week” event for the lay public in Athens, upon invitation, at the Stavros Niarchos Cultural Center, March 2018; coordination of Behavioral Neuroscience Exhibit and talk on “Cannabis and the brain: facts and fiction”
- Participation in the Athens Science Festival for the lay public in Athens, discussion on psychopharmacology and adult neurogenesis, 2014
- Tour coordinator for Behavioral Phentotyping Lab for Elementary and High School students at BRFAA, 2012-present
- Co-coordinator of the event “Science for families” for the lay public in Athens (as part of the TRANSMED program), at BRFAA, 2012

Articles for the Lay Public

- Cannabis: <https://www.vita.gr/2016/04/19/ygeia/kannabh-pantoy/>
- Brain Awareness Week:
- <http://www.avgi.gr/article/10965/8827450/brain-awareness-week-to-prisma-sten-enemerotikeekdelose-exereunontas-ton-enkephalo->
- Κάνναβη: https://www.lifo.gr/articles/greece_articles/223563/30-apantiseis-se-komvikes-aporiesgia-ti-nomimopoiisi-kai-ti-xrisi-tis-kannavis?fbclid=IwAR17RNkNrD7TGBHY-13Sw2pl18ar0oxMEbyoPu4BN0pImmVtOtl31HsQ
- Parkinson’s Disease: <https://www.in.gr/2018/11/28/b-science/o-ellinas-epistimonas-pou-anazita-ti-therapeia-giaparkinson/>

Peer Review & Editorial Boards

- 2021: Guest Editor, Special Issue “Recent Advances in α -Synuclein Neurobiology in Health and Disease”, *Biomolecules* (https://www.mdpi.com/journal/biomolecules/special_issues/alpha_Synuclein_Neurobiology)
- 2021: Review Editor, *Frontiers in Neuroscience*, *Frontiers in Neurology* and *Frontiers in Psychiatry*
- 2020-: Review Editor, Behavioral Endocrinology section, *Frontiers in Behavioral Neuroscience*
- 2020-: Review Editor, Learning and Memory section, *Frontiers in Behavioral Neuroscience*
- Reviewer: *Antioxidants*, *Current Opinion in Endocrine and Metabolic Research*, *Early Intervention in Psychiatry*, *European Journal of Psychopharmacology*, *European Journal of Neuropsychopharmacology*, *European Journal of Neuroscience*, *European Neuropsychopharmacology*, *Frontiers in Pharmacology*, *IBRO Reports*, *Life Sciences*, *International Journal of Molecular Sciences*, *International Journal of Neuropsychopharmacology*, *Laboratory Animals*, *Medicina*, *Journal of Chemical Neuroanatomy*, *Journal of Integrated Neuroscience*, *Journal of Neurochemistry*, *Neurological Research*, *Neuroscience*, *Neuroscience Letters*, *Progress in Neuro-psychopharmacology and Biological Psychiatry*, *Molecular Neurobiology*, *Psychopharmacology*

Scientific Productivity

Peer-reviewed Publications: 38, Citations: 1148, h-index = 20 (Source: Google Scholar, [Profile](#))

Book chapters: 2, Conference abstracts > 80

Invited or upon selection lectures in scientific meetings: 15

Peer-reviewed Publications

1. M. Argyrothalimidou, **A. Polissidis**, S. Karaliota, I. Papapanagioutou, E. Sotiriou, M. Manousaki, Z. Papadopoulou-Daifoti, M.G. Spillantini, L. Stefanis, D.K. Vassilatis. Functional Interaction Between α -Synuclein and Nurr1 in Dopaminergic Neurons. *Neuroscience*. (2022) Dec 1;506:114-126. doi: 10.1016/j.neuroscience.2022.10.011. PMID: 36270413
2. C. Karoussiotis, A. Sotiriou, **A. Polissidis**, A. Symeonof, D. Papavranoussi-Daponte, V. Nikolettou, Z. Georgoussi. The κ -opioid receptor-induced autophagy is implicated in stress-driven synaptic alterations. *Front Mol Neurosci*. (2022) Nov 16;15:1039135. doi: 10.3389/fnmol.2022.1039135. PMID: 36466809
3. J. Kowalczyk, M. Nakos-Bimpos, **A. Polissidis**, C. Dalla, N. Kokras, K. Skalicka-Woźniak, B. Budzyńska. Imperatorin Influences Depressive-like Behaviors: A Preclinical Study on Behavioral and Neurochemical Sex Differences. *Molecules*. (2022) Feb 10;27(4):1179. doi: 10.3390/molecules27041179. PMID: 35208969
4. **A. Polissidis**, E. Koronaïou, G. Nikolopoulou, C. Viel, M. Nikatou, M. Bogiongko, S.P. Sardi, M. Xilouri, K. Vekrellis, L. Stefanis. A double-hit *in vivo* model of *GBA* viral microRNA-mediated downregulation and human α -synuclein overexpression demonstrates nigrostriatal degeneration. *Neurobiology of Disease*. (2022) Jan 4;163:105612. doi: 10.1016/j.nbd.2022.105612. PMID: 34995756
5. A. Dimoula, D. Fotellis, E. Aivalioti, D. Delialis, **A. Polissidis**, R. Patras, N. Kokras, K. Stamatelopoulos. Off-Target Effects of Antidepressants on Vascular Function and Structure. *Biomedicines*. (2021) Dec 28;10(1):56. doi: 10.3390/biomedicines10010056. PMID: 35052735
6. D. Gkikas, D. Stellas, **A. Polissidis**, T. Manolakou, M.G. Kokotou, G. Kokotos, P.K. Politis PK. Nuclear receptor NR5A2 negatively regulates cell proliferation and tumor growth in nervous system malignancies. (2021) *PNAS*. doi: 10.1073/pnas.2015243118. PMID: 34561301
7. E. Tsoupri, I. Kostavasili, I. Kloukina, M. Tsikitis, D. Miliou, E. Vasilaki, A. Varela, M. Nakos-Bimpos, C. Davos, M. Mavroidis, **A. Polissidis**, Y. Capetanaki. Myospryn deficiency leads to impaired cardiac structure and function and schizophrenia-associated symptoms. (2021) *Cell Tissue Res*. doi: 10.1007/s00441-021-03447-2. PMID: 34037836
8. N. Pouliou, F. Delis, C. Brakatselos, **A. Polissidis**, Y. Koutmani, N. Kokras, C. Dalla, PK Politis, K. Antoniou. Detrimental effects of adolescent escalating low-dose Δ^9 -tetrahydrocannabinol leads to a specific bio-behavioural profile in adult male rats. (2021) *Br J Pharmacol*. doi: 10.1111/bph.15394.
9. **A. Polissidis**, V. Kollia, Maria Koronaïou, M. Boyongo, S. Vrettou, M. Nakos-Mpimpos, N. Casadei, O. Riess, P. Sardi, M. Xilouri, L. Stefanis. Psychosis-like behavior and hyperdopaminergic dysregulation in human alpha-synuclein BAC transgenic rats (2020) *Movement Disorders*. doi: 10.1002/mds.28383. PMID: 33200461
10. I. Chaniotakis, E. Diamantakos, V. Rizou, E. Moltsanidou, C. Kotopoulis, M. Thavarajah, **A. Polissidis**, N. Kostomitsopoulos. Laboratory rats as pets: The potential role of neonatal handling schedule for their life in and after the lab. (2020) *Pet Behaviour Science*. 10: 36 – 45. <https://doi.org/10.21071/pbs.vi10.12480>.
11. J. Kowalczyk J, M. Nakos-Bimpos M, **A. Polissidis**, C. Dalla, N. Kokras, K. Skalicka-Wozniak, B. Budzynska. Xanthotoxin affects depression-related behavior and neurotransmitters content in a sex-dependent manner in mice. (2020) *Behavioural Brain Research*. doi: 10.1016/j.bbr.2020.112985. Online ahead of print. PMID: 33144177
12. V.S. Sykioti, M. Karampetsou, I. Chalatsa, **A. Polissidis**, I.P. Michael, M. Pagaki-Skaliara, A. Nagy, E. Emmanouilidou, G. Sotiropoulou, K. Vekrellis. Deficiency of the serine peptidase Kallikrein 6 does not affect the levels and the pathological accumulation of α -synuclein in mouse brain. (2020) *Journal of Neurochemistry*. doi: 10.1111/jnc.15199. Online ahead of print. PMID: 32974895
13. **A. Polissidis**, L. Petropoulou-Vathi, M. Nakos-Bimpos M, H.J. Rideout. The Future of Targeted Gene-Based Treatment Strategies and Biomarkers in Parkinson's Disease. (2020) *Biomolecules*. 10(6): 912. doi: 10.3390/biom10060912. Review.

14. I.A. Gampierakis, Y. Koutmani, M. Semitekoulou, I. Morianos, **A. Polissidis**, A. Katsouda, I. Charalampopoulos, G. Xanthou, A. Gravanis, K.P. Karalis. Hippocampal neural stem cells and microglia response to experimental inflammatory bowel disease (IBD). (2020) *Molecular Psychiatry*. doi: 10.1038/s41380-020-0651-6. Online ahead of print. PMID: 31969694
15. Y. Koutmani, I.A. Gampierakis, **A. Polissidis**, M. Ximerakis, P.N. Koutsoudaki, A. Polyzos, G. Agrogiannis, S. Karaliota, D. Thomaidou, L.L. Rubin, P.K. Politis, K.P. Karalis. CRH Promotes the Neurogenic Activity of Neural Stem Cells in the Adult Hippocampus. (2019). *Cell Reports*. 29(4):932-945. doi: 10.1016/j.celrep.2019.09.037.
16. V. Refolo, F. Bez, **A. Polissidis**, D. Kuzdas-Wood, E. Sturm, M. Kamaratou, W. Poewe; L. Stefanis, A. Cenci, M. Romero-Ramos, G.K. Wenning, N. Stefanova. Neuropathological correlates of motor deterioration in a transgenic mouse model of multiple system atrophy: insights into disease progression and selective neurodegeneration. (2018). *Acta Neuropathologica Communications*. 6(1):2. <https://doi.org/10.1186/s40478-017-0504-y>.
17. M. Karampetsou, M.T. Ardah, M. Semitekoulou, **A. Polissidis**, M. Samiotaki, M. Kalomoiri, N. Majbour, G. Xanthou, O.M.A El-Agnaf, K. Vekrellis. Phosphorylated exogenous alpha-synuclein fibrils exacerbate pathology and induce neuronal dysfunction in mice. (2017). *Scientific Reports*. 7(1):16533. doi: 10.1038/s41598-017-15813-8.
18. S. Venezia, V. Refolo, **A. Polissidis**, L. Stefanis, G.K. Wenning, N. Stefanova. Toll-like receptor 4 stimulation with monophosphoryl lipid A ameliorates motor deficits and nigral neurodegeneration triggered by extraneuronal α -synucleinopathy. (2017) *Molecular Neurodegeneration*. 12(1):52. doi: 10.1186/s13024-017-0195-7.
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Book Chapters

1. K. Antoniou, **A. Polissidis**, F. Delis, N. Poulia. “The Impact of Cannabinoids on Motor Activity and Neurochemical Correlates”. (2017) *In Vivo Neuropharmacology and Neurophysiology, Experiments* Springer Nature pp. 341-365.
2. **A. Polissidis**, G. Panagis, K. Antoniou. “Cannabis: pharmacology, medical use, clinical presentation and therapeutic approaches”. (2018) *Addiction* (Οι Εξαορτήσεις- Greek), Crete University Press pp. 111-124.

Laboratory Techniques

- Behavioural studies in rats and mice: established species-specific behaviours for mice (marble burying, nesting), open field test, locomotor activity tests, non-associative habituation learning, conditioned place preference, object recognition task, motor coordination tests, (pole, beam, inverted grid), grip strength,

forced swim test, elevated plus maze, light-dark box, Morris water maze, radial maze, active/passive avoidance, fear conditioning, sucrose preference, prepulse inhibition and acoustic startle; chronic mild stress paradigm and sexual behaviour assessment

- Metabolic assessment of mice (CLAMS)
- Neurochemical procedures: *in vivo* microdialysis, stereotaxic surgeries (probe/cannula implantation and viral injections) and *ex vivo* tissue assays
- High Performance Liquid Chromatography (HPLC) with electrochemical or UV detection- expertise in measurement of monoamine and amino acid neurotransmitters
- DNA genotyping
- Western immunoblotting
- Immunohistochemistry, immunofluorescence, stereology
- Radioimmunoassay (RIA), ELISA
- Optical/Fluorescence microscopy, Confocal laser scanning microscopy
- Cell culture, siRNA transfections, live cell imaging
- Training in GCMS
- Principles of clinical research
- DREADD and optogenetic techniques (surgeries, photo stimulation, CNO administration)
- RNA extraction and sequencing
- Primary neuronal cultures

Ongoing research support

“CANNABinAutism” Lead PI: Katerina Antoniou
Funding Source: Research-Create -Innovate T2 EDK Project Period: 01/06/2020-31/05/2023
Type: Co-Financed by the EU and Greek National Funds- SME/Academic consortium
Preclinical assessment of cannabinoids' therapeutic efficacy in the Fmr1 knockout rat model of autism
Modelling psychosis: Chronic adolescence Δ 9-tetrahydrocannabinol exposure.
Role: Collaborating Researcher, 09/09/21- present

“TO_AITON” Lead PI: Evangelos Andreakos
Funding Source: H2020-SC1-2018-2020 Project Period: 01/01/2020-31/12/2025
Type: HORIZON 2020, Health, demographic change and well-being
A high-dimensional approach for unwinding immune-metabolic causes of cardiovascular disease-depression multimorbidities.
Role: Co-Supervisor PhD Student, 01/01/20- present

“NeuroStresSyn” Lead PI: Alexia Polissidis
Funding Source: Hellenic Foundation for Research and Innovation (HFRI)
Type: Postdoctoral Grant (180 000 euros) Project Period: 05/09/2018-04/04/2022
We are assessing the potential gene-environment interactions in neurodegeneration. Specifically, chronic stress-driven brain pathology in a human alpha-synuclein overexpression model is being assessed based on the premise that increased alpha-synuclein burden may predispose an individual to neurodegeneration and synucleinopathies, but that such neurodegeneration may not manifest unless there is a second environmental hit.

Completed research support

1. “Peptide inhibitors of mutant LRRK2-induced neurodegeneration: targeting the interaction between LRRK2 and FADD.” *PI: Hardy Rideout; Co-PI: Alexia Polissidis
Funding Source: Parkinson’s and Movement Disorders Foundation (PMDF)
Type: Foundation Grant (5000 USD) Project Period: 13/02/2019-12/02/2020
We assessed the interaction between mutant LRRK2 and the death adaptor protein FADD as a means to halt LRRK2-associated neurodegeneration.

