

October | 2021

SPYROS PETRAKIS



INSTITUTE OF APPLIED BIOSCIENCES
ΙΝΣΤΙΤΟΥΤΟ ΕΦΑΡΜΟΣΜΕΝΩΝ ΒΙΟΕΠΙΣΤΗΜΩΝ

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Curriculum Vitae

NAME SPYROS PETRAKIS		CURRENT POSITION Researcher Grade C, Institute of Applied Biosciences [INAB], Centre for Research and Technology Hellas [CERTH], Thessaloniki	
EDUCATION/TRAINING			
INSTITUTION	GRADE	PERIOD	FIELD OF STUDY
Aristotle University of Thessaloniki	BSc	1995-2001	Biology
Aristotle University of Thessaloniki	PhD	2002-2007	Molecular Pharmacology

CURRENT POSITION

2021 - today Researcher Grade C, Institute of Applied Biosciences, CERTH, Thessaloniki

PREVIOUS POSITIONS

2016 - 2021 Postdoctoral researcher, INAB/CERTH, Thessaloniki
2013 - 2015 Postdoctoral researcher, BRFAA/NKUA, Athens
2010 - 2015 Researcher, Biohellenika Biotechnology Company, Thessaloniki
2009 - 2010 External group member, Department of Neuroproteomics, Max-Delbrueck
Center for Molecular Medicine (MDC), Berlin, Germany.
2007 - 2009 Postdoctoral researcher, Department of Neuroproteomics, MDC Berlin,
Germany.

OTHER POSITIONS

2018-2021 Member of the Management Committee of MINDDDS COST action

MEMBERSHIPS

2020 - today Hellenic Association of Bioscientists
2020 - today Society for Free Radical Research - Europe
2020 - today Ataxia Global Initiative
2020 - today National Ataxia Foundation
2018 - today Hellenic Society for Neurosciences
2010 - today Hellenic Society of Biochemistry and Molecular Biology

ORGANIZATION OF SCIENTIFIC MEETINGS

2021	MINDDS-ECNP joint workshop, Patient iPSC studies: Translatability for Mental Health
2019	MINDDS COST Action 16210 meeting, Methods for cell phenotyping
2017	3rd Challenges in Computational Biology, Protein Interaction Networks & Disease

REVIEW ASSIGNMENTS

I. Reviewer in scientific journals (Ad hoc reviewer)

Molecular Biotechnology, PLOS One, Frontiers in Cellular Neuroscience, Stem cells Translational Medicine, Theranostics, BMC Neuroscience

II. Editor in scientific journals

Associate editor in «Protein Interaction Networks in Health and Disease. Lausanne: Frontiers Media», 2016

III. Reviewer in scientific conferences (Ad hoc reviewer)

SFRR-E Congress

TEACHING ACTIVITIES

I. Instructor in postgraduate courses of the following universities

Aristotle University of Thessaloniki | International Hellenic University | Democritus University of Thrace

II. Supervisor

2016 - today Supervisor of 3 undergraduate και 1 postgraduate theses

PUBLICATIONS

I. Summary

- 25 publications (13 October 2021) | 3 review/opinion/bioassay papers, 22 original publications

- h-factor: 13 | total citations : 338 (Google Scholar, 13 October 2021)

- editor of 1 scientific book

II. List of publications

1. Gkekas, A. Gioran, M.K. Boziki, N. Grigoriadis, N. Chondrogianni, S. Petrakis. (2021) Oxidative Stress and Neurodegeneration: Interconnected Processes in PolyQ Diseases. *Antioxidants* 2021, 10(9), 1450. DOI: 10.3390/antiox10091450, Impact factor (IF): 6.312.
2. Andreadelli, S. Petrakis, A. Tsourekis, G. Tsiolas, S. Michailidou, P. Baltzopoulou, R. van Merkesteyn, P. Hodgson, M. Sceats, G. Karagiannakis, AM. Makris. (2021) Effects of Magnesium Oxide and Magnesium Hydroxide Microparticle Foliar Treatment on Tomato PR Gene Expression and Leaf Microbiome. *Microorganisms* 9 (6), 1217. DOI: 10.3390/microorganisms9061217, IF: 4.152.

3. Vagiona AC, Andrade-Navarro MA, Psomopoulos F, Petrakis S. (2020) Dynamics of a Protein Interaction Network Associated to the Aggregation of polyQ-Expanded Ataxin-1. *Genes (Basel)*. Sep 25;11(10):1129. DOI: 10.3390/genes11101129, IF: 3.759.
4. Asimakopoulou A, Gkekas I, Kastrinaki G, Prigione A, Zaspalis VT, Petrakis S. (2020) Biocompatibility of α -Al₂O₃ Ceramic Substrates with Human Neural Precursor Cells. *J Funct Biomater*. Sep 16;11(3):65. DOI: 10.3390/jfb11030065. IF: 7.09.
5. Drakulic D, Djurovic S, Syed YA, Trattaro S, Caporale N, Falk A, Ofir R, Heine VM, Chawner SJRA, Rodriguez-Moreno A, van den Bree MBM, Testa G, Petrakis S*, Harwood AJ. (2020) Copy number variants (CNVs): a powerful tool for iPSC-based modelling of ASD. *Mol Autism*. Jun 1;11(1):42. (* Corresponding author) DOI: 10.1186/s13229-020-00343-4, IF: 5.869.
6. Laidou S, Alanis-Lobato G, Pribyl J, Raskó T, Tichy B, Mikulasek K, Tsagiopoulou M, Oppelt J, Kastrinaki G, Lefaki M, Singh M, Zink A, Chondrogianni N, Psomopoulos F, Prigione A, Ivics Z, Pospisilova S, Skladal P, Izsvák Z, Andrade-Navarro MA, Petrakis S. (2020) Nuclear inclusions of pathogenic ataxin-1 induce oxidative stress and perturb the protein synthesis machinery. *Redox Biol*. May;32:101458. DOI: 10.1016/j.redox.2020.101458, IF: 11.799.
7. G. Alanis-Lobato and S. Petrakis. (2017) Editorial: Protein Interaction Networks and Disease: Highlights of the 3rd Challenges in Computational Biology Meeting. *Genomics and Computational Biology* Dec 4 (1), p. e100056. DOI: 10.18547/gcb.2018.vol4.iss1.e100056.
8. EK Siska, J Romano, I Weisman, Z Ivics, Z Izsvak, U Barkai, S Petrakis*,#, G Koliakos. (2017) Generation of an immortalized mesenchymal stem cell line producing a secreted biosensor protein for glucose monitoring. *PLOS ONE*. 12(9): e0185498. (*, # Corresponding author, equal contribution). DOI: 10.1371/journal.pone.0185498, IF: 2.740
9. V Trachana, S Petrakis, Z Fotiadis, Balis V, M Kaloyianni, G Koliakos. (2017) Human mesenchymal stem cells with enhanced telomerase activity acquire resistance against oxidative stress-induced genomic damage. *Cytotherapy* Jul;19(7):808-820. DOI: 10.1016/j.jcyt.2017.03.078, IF: 4.218.
10. M. Kapetanou, N. Chondrogianni, S. Petrakis, G. Koliakos, S. Gonos. (2017) Proteasome activation enhances stemness and lifespan of mesenchymal stem cells. *Free Radic Biol Med*. Feb;103:226-235. DOI: 10.1016/j.freeradbiomed.2016.12.035, IF: 6.17.
11. I Dori, S Petrakis, A Giannakopoulou, C Bekiari, I Grivas, EK Siska, G Koliakos, G Papadopoulos. (2016) Seven days post-injury fate and effects of genetically labelled adipose-derived mesenchymal cells on a rat traumatic brain injury experimental model. *Histol Histopathol*. Dec 30:11864. DOI: 10.14670/HH-11-864, IF: 2.025.
12. Petrakis S* and Andrade-Navarro MA. (2016) Editorial: Protein interaction networks in health and disease. *Front Genet*. Jun 14;7:111. (*Corresponding author). DOI: 10.3389/fgene.2016.00111, IF: 3.789.
13. Siska EK, Koliakos G, Petrakis S. (2015) Stem cell models of polyglutamine diseases and their use in cell-based therapies. *Front Neurosci*. Jul 14;9:247. DOI: 10.3389/fnins.2015.00247, IF: 3.566.
14. Almaliotis D, Koliakos G, Papakonstantinou E, Komnenou A, Thomas A, Petrakis S, Nakos I, Gounari E, Karampatakis V. (2015) Mesenchymal stem cells improve healing of the cornea after alkali injury. *Graefes Arch Clin Exp Ophthalmol*. Jul;253(7):1121-35. DOI: 10.1007/s00417-015-3042-y, IF: 2.396.

15. S. Petrakis*, MH. Schaefer, EE. Wanker, MA. Andrade-Navarro. (2013) Aggregation of polyQ-extended proteins is promoted by interaction with their natural coiled-coil partners. *Bioessays* 35 (6) 503-507. (*Corresponding author). Comment in *Bioessays*, Section: Ideas to watch, 35 (6) 500. DOI: 10.1002/bies.201300001, IF: 4.725.
16. V. Karathanasis, S. Petrakis*, K. Topouridou, E. Koliakou, G. Koliakos and E. Demiri. (2013) Intradermal injection of GFP-producing adipose-derived stromal cells promotes survival of random-pattern skin flaps in rats. *Eur J Plast Surg* 2013, 36 (5) 281-288. (*Corresponding author). DOI: :10.1007/s00238-013-0810-y, IF: 0.51.
17. S. Petrakis, T. Rasko, J. Russ, M. Stroedicke, SP. Riechers, R. Friedrich, A. Moeller, A. Reinhardt, A. Vinayagam, M. Schaefer, M. Boutros, H. Tricoire, M. A. Andrade-Navarro E. E. Wanker. (2012) Identification of Human Proteins that Modify Misfolding and Proteotoxicity of Pathogenic Ataxin-1. *PLoS Genetics* 8 (8): e1002897. Best of 2012/2013 NGFN-Plus & NGFN-Transfer papers. DOI: 10.1371/journal.pgen.1002897, IF: 5.109.
18. Petrakis S.*, Raskó T., Mates L., Ivics Z., Izsvak Z., Kouzi-Koliakou K. and Koliakos G. (2012) Gateway compatible transposon vector to genetically modify human embryonic kidney and adipose-derived stromal cells. *Biotechnol J*. Feb 10. (* Corresponding author) DOI: 10.1002/biot.201100471, IF: 3.543.
19. Vasileiadou K, Pantazidis G, Papadopoulou K, Ligoudistianou C, Kourelis A, Petrakis S, Masmanidou E, Testa T, Kourounakis AP, Hadjipetrou L, Papaconstantinou J, Yiangou M. (2010) alpha1-Acid glycoprotein production in rat dorsal air pouch in response to inflammatory stimuli, dexamethasone and honey bee venom. *Exp Mol Pathol*. Aug;89(1):63-71. DOI: 10.1016/j.yexmp.2010.03.008, IF: 2.280.
20. Salta E, Panagiotidis C, Petrakis S, Eleftheriadis E, Arapoglou F, Grigoriadis N, Nicolaou A, Kaldrymidou E, Krey G, Sklaviadis T. (2009) Evaluation of the Possible Transmission of Prions to Sea Bass. *PLoS One*. Jul 28;4(7):e6175. DOI: 10.1371/journal.pone.0006175, IF: 2.740.
21. S. Petrakis, A Malinowska, M Dadlez, T Sklaviadis. (2009) Identification of proteins co-purifying with scrapie infectivity. *Journal of Proteomics* 72(4), 690-694. DOI: 10.1016/j.jprot.2009.01.025, IF: 3.537.
22. Petrakis S, Irinopoulou T, Panagiotidis CH, Engelstein R, J Lindstrom, A Orr-Urtreger, R Gabizon, N Grigoriadis, T Sklaviadis. (2008) Cellular prion protein co-localizes with nAChR beta4 subunit in brain and gastrointestinal tract. *European Journal of Neuroscience* 27, 612-620. DOI: 10.1111/j.1460-9568.2008.06037.x, IF: 3.115.
23. S. Petrakis and T. Sklaviadis. (2006) Identification of proteins with high affinity for refolded and native PrPC. *Proteomics* 6, 6476–6484. Comment in *Journal of Proteome Research* 2007 6(2), 436. DOI: 10.1002/pmic.200600103, IF: 3.106.
24. Xanthopoulos K., Paspaltsis I., Apostolidou V., Petrakis S., Siao C.-J., Kalpatsanidis A., Grigoriadis N., Tsaftaris A., Tsirka S.E., Sklaviadis T. (2005) Tissue Plasminogen Activator in Brain Tissues Infected with Transmissible Spongiform Encephalopathies. *Neurobiol Dis*. 20(2):519-527. DOI: 10.1016/j.nbd.2005.04.008, IF: 5.227.
25. M. Sachsamanoglou, I. Paspaltsis, S. Petrakis, S. Verghese-Nikolakaki, CH. Panagiotidis, T. Voigtlander, H. Budka, JP. Langeveld, T. Sklaviadis. (2004) Antigenic profile of human recombinant PrP: generation and characterization of a versatile polyclonal antiserum. *Journal of Neuroimmunology* 146, 22–32. DOI: 10.1016/j.jneuroim.2003.09.018., IF: 3.033.

Conference papers

1. P. K. Baltzopoulou, L. E. Secondo, A. Asimakopoulou, D. Deloglou, C. Softas, S. Petrakis, L. Chasapidis, E. Papaioannou, N. A. Lewinski, A. G. Konstandopoulos (2017) Cross Evaluating the Effects of a Cerium-Based Diesel Fuel Additive on Exhaust Toxicity with in vitro Air-Liquid Interface Cell Exposure Systems of Different Flow Patterns. 21st ETH Conference on Combustion Generated Nanoparticles.
2. S. Mylonas, A. Axenopoulos, S. Katsamakas, I. Gkekas, K. Stamatopoulos, S. Petrakis, P. Daras. (2020) Deep learning-assisted pipeline for Virtual Screening of ligand compound databases: Application on inhibiting the entry of SARS-CoV-2 into human cells. IEEE 20th International Conference on Bioinformatics and Bioengineering (BIBE), pp. 132-139. DOI: 10.1109/BIBE50027.2020.00030.

Publications in conference proceedings

1. Giannakopoulou, S. Petrakis (2019) Survival and fate of adipose derived mesenchymal stem cells in a rat brain injury model. Bone Marrow Transplantation 54, 289-290.M. Kaloyianni, A. Pouikli, L. Kyrka, S. Petrakis, G. Koliakos, V. Trachana (2015) Telomerase overexpression in human mesenchymal stem cells offers protection against oxidative DNA damage accumulation. Cytotherapy 17 (6), S34-S35.
2. E. Papachristou, T. Kodjapashi, P. Kavatzikidou, E. Georgaraki, S. Petrakis, E. Pavlidou, K. Kouzi-Koliakou, V. Karagkiozaki, S. Logothetidis, T. Choli-Papadopoulou (2014) Nanoscaffolds with immobilized bio-factors enhance the induction of stem cell differentiation into chondrocytes. The Febs Journal 281, 231-232.
3. Giannakopoulou, I. Dori, C. Bekiari, S. Petrakis, I. Grivas, A. Tsingotjidou, G. Koliakos, G. Papadopoulos (2014) Adipose stem cells transplantation in a rat traumatic brain injury model. Cytotherapy 16 (4), S62.
4. S. Petrakis, A. Droege, A. Boeddrich, E. Wanker (2008) Identification of proteins modifying polyQ aggregation/toxicity in spinocerebellar ataxias. The Febs Journal 275.

Books

Petrakis, S., Andrade-Navarro, M. A., eds. (2016). Protein Interaction Networks in Health and Disease. Lausanne: Frontiers Media.

CURRENT RESEARCH INTERESTS

1. Molecular neurobiology
2. Biotechnological applications of biomaterials
3. Biology of human stem cells

RESEARCH GRANTS IN THE LAST 5 YEARS

I. Funding from the European Union and the Greek Government

Total funding: 399.283 €

1. Horizon 2020 | Funding: 85.750€
2. ESPA 2014-2020 | Funding: 133.533€
3. HFRI scholarships | Funding: 180.000€

COLLABORATIONS

I. Centre for Research and Technology Hellas

P. Daras

D. Margaritis

A. Asimakopoulou

G. Kastrinaki

G. Karayiannakis

II. National collaborations

N. Grigoriadis, B' Neurological Department, AHEPA Hospital, AUTH, Thessaloniki.

K. Xanthopoulos, School of Pharmacy, AUTH, Thessaloniki.

G. Papadopoulos, School of Veterinary Medicine, AUTH, Thessaloniki.

G. Kouroupi/R. Mastas, Pasteur Institute, Athens

N. Chondrogianni, NHRF, Athens

T. Kalogeropoulou, NHRF, Athens

A. Tzakos, School of Chemistry, Ioannina

III. International collaborations

Erich Wanker, MDC, Berlin, Germany.

Miguel Andrade, IMB, Mainz, Germany.

Zoltan Ivics, PEI, Langen, Germany.

Zsuzsanna Izsvak, MDC, Berlin, Germany.

Ruben Fernandez-Busnadiego, University of Göttingen, Germany.

Adrian Harwood, University of Cardiff, UK.

Michael Peitz, University of Bonn, Germany.

Ronald Buijsen, Leiden University, The Netherlands.

Sarka Pospisilova, CEITEC, Brno, Czech Republic.

Petr Skladal, CEITEC, Brno, Czech Republic.