

PERSONAL INFORMATION**SURNAME: GIANNAKAKIS****NAME: ANTONIS****DATE OF BIRTH: 8 MARCH 1980****PLACE OF RESIDENCE: ALEXANDROUPOLIS****e-mail: antgian@mbg.duth.gr****TEL. (+30) 25510 30639****CURRENT POSITIONS**

- 11.2018 – Assistant Professor in Computational Molecular Biology**, Dept. Molecular Biology and Genetics (MBG), Health Science School, Democritus University of Thrace (DUTH), Alexandroupolis, Greece.
- 05.2019 – Researcher C on Non-coding RNAs and Computational Molecular Biology**, University Research Institute for the Study of Genetic & Malignant Disorders in Childhood, Choremeion Research Laboratory, Agia Sofia General Pediatric Hospital of Athens, National & Kapodistrian University of Athens, Greece.
- 01.2020 – PI at DarkMatters Group at the Laboratory of Gene Expression, Molecular Diagnosis & Modern Therapeutics**, Dept. Molecular Biology and Genetics (MBG), Health Science School, Democritus University of Thrace (DUTH), Alexandroupolis, Greece.
- 04.2021 – Co-PI at the Biomedical Data Science and Bioinformatics Facility**, Dept. Molecular Biology and Genetics (MBG), Health Science School, Democritus University of Thrace (DUTH), Alexandroupolis, Greece.

PREVIOUS POSITIONS

- 01.2018 – 08.2018 Senior Research Fellow**
Hellenic Institute of Pasteur (HPI), DIANA-lab, Athens, Greece.
- 10.2016 – 08.2018 Senior Research Fellow**
University Research Institute for the Study of Genetic & Malignant Disorders in Childhood, Choremeio Research Center, A' Department of Pediatrics, National and Kapodistrian University of Athens, Agia Sofia General Pediatric Hospital of Athens, Greece.
- 11.2009 – 08.2016 Post-doc Research Fellow**
Agency for Science, Technology and Research (A*STAR), Bioinformatics Institute, Division of Genome and Gene Expression Data Analysis, Singapore.
- 08.2005 – 12.2007 Visiting Scholar**
Center for Research on Reproduction and Women's Health, Department of Obstetrics and Gynecology, University of Pennsylvania Medical Center, Philadelphia, USA

EDUCATION

INSTITUTION AND LOCATION	DEGREE	COMPLETION DATE	FIELD OF STUDY
University of Wales, School of Biosciences, U.K.	B.Sc	09/2001	Human Genetics
University of Birmingham, Medical Research Center (MRC), Medical School, U.K.	M.Sc	12/2002	Immunology and Infectious Diseases

INSTITUTION AND LOCATION	DEGREE	COMPLETION DATE	FIELD OF STUDY
Democritus University of Thrace, Health Science School, Dpt. Molecular Biology & Genetics, Greece	Ph.D	02/2008	Molecular Biology

RESEARCH INTERESTS

Molecular Biology, Bioinformatics, RNA Biology, Stress Biology, Non-coding RNAs, Exosomes, Breastmilk, Cancer, Autoimmune disorders, Multiple Sclerosis.

MEMBERSHIPS & REVIEWING ACTIVITIES

Vice-president of the Hellenic Association of Computational Biology and Bioinformatics, Member of the Hellenic Society of Biochemistry and Molecular Biology

Review Editor, Cancer Letters

TEACHING ACTIVITIES

Undergraduate level «Bioinformatics», «Gene expression & Cell Signaling», «The RNA World» Dept. Molecular Biology and Genetics (MBG), DUTH, Alexandroupolis, Greece.

Postgraduate level «The evolution of Gene Expression» at the MSc. Programme “Translational Research in Molecular Biology and Genetics” since 2018, Dept. Molecular Biology and Genetics, DUTH and “qPCR Data Analysis – The Gold Standard of molecular diagnosis and identification, at the MSc. Programme “Infectious Diseases and International Medicine: From Bench to Bedside”, since 2018, Dept. Molecular Biology and Genetics, DUTH.

Textbook translation Participation in translation in Greek language of the textbooks *GENES VIII*, B. Lewin and *Bioinformatics and Functional Genomics*, 3rd edition (7th Chapter: Molecular Phylogenesis and Evolution), Jonathan Pevsner

Supervision 5 undergraduate (2 completed), 3 Postgraduate diploma theses and 3 PhD theses (in progress)

ADMINISTRATIVE ACTIVITIES

Regular Member of the General Assembly and various internal Boards in the Dpt of MBG, DUTH.

PUBLICATION METRICS AND FUNDING

- Co-authored 20 articles in peer-reviewed journals such as: Proc Natl Acad Sci USA, Cancer Res, Clin. Cancer Res, Mol Cancer Res, Cancer Biol Ther, Cancer Lett, Scientific Reports, RNA, Expert Opin Biol Ther, Int. J. Biochem. Cell Biol., Journal of Hepatology, Atherosclerosis
- Citations: > 3154 (Google Scholar), > 2223 (Scopus)
- h-factor: 13, i10-index: 15
- Participated in 3 competitive research projects (in 2 as Scientist in charge for MBG, DUTH) with total budget >3 M€

PEER-REVIEWED RESEARCH ARTICLES (IN REVERSE CHRONOLOGICAL ORDER)

M. Tsifintaris, C. Triantafyllou, G. Siong Ow, C. Papp, V. Gouzouasis, A.V. Ivshina, V. Kuznetsov and **A. Giannakakis**, “Stress Induced Long Noncoding RNA KDM7A-DT drives DNA Repair via NHEJ promoting breast cancer in a stress-dependent manner,” In preparation, 2022.

LncRNA NORAD is consistently detected in breastmilk exosomes and downregulated in mothers of preterm infants. N. Mourtzi, T. Sihanidou, M. Tsifintaris, E. Karamichali, A. Tasiopoulou, A. Sertedaki, M. Pesmatzoglou, A. Kapetanaki, G. Liosis, G. Baltatzis, D. Vlachakis, G. Chrousos, and **A. Giannakakis** (2021). *Int J Mol Med* 48: 216, 2021

An updated evolutionary study of the nuclear receptor protein family. L. Papageorgiou, L. Shalzi, K. Pierouli, E. Papakonstantinou, S. Manias, K. Dragoumani, N.C. Nicolaidis, **A. Giannakakis**, F. Bacopoulou, G.P. Chrousos, E. Eliopoulos, D. Vlachakis (2021). *World Academy of Sciences Journal*, vol. 3, pp. 1-8. DOI: 10.3892/wasj.2021.122

Distinctive molecular signature and activated signalling pathways in aortic smooth muscle cells of patients with myocardial infarction, T. Wongsurawat, C.C. Woo, **A. Giannakakis**, X.Y. Lin, E.S. Hwee Cheow, C.N. Lee, M. Richards, S.K. Sze, I. Nookaew, V.A. Kuznetsov, and V. Sorokin (2018). *Atherosclerosis*, vol. 271, pp. 237-244. DOI: 10.1016/j.atherosclerosis.2018.01.024

Transcriptome alterations of vascular smooth muscle cells in aortic wall of myocardial infarction patients. T. Wongsurawat, C.C. Woo, **A. Giannakakis**, X.Y. Lin, E.S. Hwee Cheow, C. Neng Lee, M. Richards, S. Kwan Sze, I. Nookaew, V.A. Kuznetsov, V. Sorokin (2018). *Data in brief*, vol.17, pp. 1112-1135. DOI: 10.1016/j.dib.2018.01.108

A. Giannakakis, J. Zhang, P. Jenjaroenpun, S. Nama, N. Zainolabidin, M. Y. Aau, A. A. Yarmishyn, C. Vaz, A. V. Ivshina, O. V. Grinchuk, M. Voorhoeve, L. A. Vardy, P. Sampath, V. A. Kuznetsov, I. V. Kurochkin, and E. Guccione, "Contrasting expression patterns of coding and noncoding parts of the human genome upon oxidative stress," *Sci. Rep.*, pp. 1–16, 2015.

A. Karapetsas, **A. Giannakakis**, D. Dangaj, E. Lanitis, S. Kynigopoulos, M. Lambropoulou, J.L. Tanyi, A. Galanis, S. Kakolyris, G. Trypsianis, G. Coukos, R. Sandaltzopoulos, "Over-expression of GPC6 and TMEM132D in early stage ovarian cancer correlates with CD8+ T-lymphocyte infiltration and increased patient survival." *BioMed Research International*, vol. 2015, pp. 1-9, 2015.

A. Giannakakis, A. Karapetsas, D. Dangaj, E. Lanitis, J. Tanyi, G. Coukos, and R. Sandaltzopoulos, "Overexpression of SMARCE1 is associated with CD8+ T-cell infiltration in early stage ovarian cancer," *Int. J. Biochem. Cell Biol.*, vol. 53, pp. 389–398, 2014.

A. Tan, D. H. P. Low, **A. Giannakakis**, V. Kuznetsov, C. Ferrari, E. Guccione, and A. Bertoletti, "Upregulation of chromatin modifying genes in exhausted T-cells from chronic HBV patients. *Journal of Hepatology*," vol. 60, no. 1, p. S126, 2014.

E. Beillard, S. C. Ong, **A. Giannakakis**, E. Guccione, L. A. Vardy, and P. M. Voorhoeve, "miR-Sens -a retroviral dual-luciferase reporter to detect microRNA activity in primary cells.," *RNA*, vol. 18, no. 5, pp. 1091–1100, 2012.

A. Karapetsas, **A. Giannakakis**, M. Pavlaki, M. Panayiotidis, R. Sandaltzopoulos, and A. Galanis, "Biochemical and molecular analysis of the interaction between ERK2 MAP kinase and hypoxia inducible factor-1 α ," *Int. J. Biochem. Cell Biol.*, vol. 43, no. 11, pp. 1582–1590, 2011.

A. Galanis, A. Pappa, **A. Giannakakis**, E. Lanitis, D. Dangaj, and R. Sandaltzopoulos, "Reactive oxygen species and HIF-1 signalling in cancer.," *Cancer Lett.*, vol. 266, no. 1, pp. 12–20, 2008.

L. Zhang, S. Volinia, T. Bonome, G. A. Calin, J. Greshock, N. Yang, C.-G. Liu, **A. Giannakakis**, P. Alexiou, K. Hasegawa, C. N. Johnstone, M. S. Megraw, S. Adams, H. Lassus, J. Huang, S. Kaur, S. Liang, P. Sethupathy, A. Leminen, V. A. Simossis, R. Sandaltzopoulos, Y. Naomoto, D. Katsaros, P. A. Gimotty, A. DeMichele, Q. Huang, R. Bützow, A. K. Rustgi, B. L. Weber, M. J. Birrer, A. G. Hatzigeorgiou, C. M. Croce, and G. Coukos, "Genomic and epigenetic alterations deregulate microRNA expression in human epithelial ovarian cancer.," *Proc. Natl. Acad. Sci. U.S.A.*, vol. 105, no. 19, pp. 7004–7009, 2008.

A. Giannakakis, R. Sandaltzopoulos, J. Greshock, S. Liang, J. Huang, K. Hasegawa, C. Li, A. O'Brien-Jenkins, D. Katsaros, B. L. Weber, C. Simon, G. Coukos, and L. Zhang, "miR-210 links hypoxia with cell cycle regulation and is deleted in human epithelial ovarian cancer.," *Cancer Biol. Ther.*, vol. 7, no. 2, pp. 255–264, 2008.

N. Yang, J. Huang, J. Greshock, S. Liang, A. Barchetti, K. Hasegawa, S. Kim, **A. Giannakakis**, C. Li, A. O'Brien-Jenkins, D. Katsaros, R. Bützow, G. Coukos, and L. Zhang, "Transcriptional regulation of PIK3CA oncogene by NF-kappaB in ovarian cancer microenvironment.," *PLoS ONE*, vol. 3, no. 3, p. e1758, 2008.

L. Zhang, J. Huang, N. Yang, J. Greshock, S. Liang, K. Hasegawa, **A. Giannakakis**, N. Poulos, A. O'Brien-Jenkins, D. Katsaros, R. Bützow, B. L. Weber, and G. Coukos, "Integrative genomic analysis of phosphatidylinositol 3'-kinase family identifies PIK3R3 as a potential therapeutic target in epithelial ovarian cancer.," *Clin. Cancer Res.*, vol. 13, no. 18, pp. 5314–5321, 2007.

L. Zhang, J. Huang, N. Yang, J. Greshock, M. S. Megraw, **A. Giannakakis**, S. Liang, T. L. Naylor, A. Barchetti, M. R. Ward, G. Yao, A. Medina, A. O'Brien-Jenkins, D. Katsaros, A. Hatzigeorgiou, P. A. Gimotty, B. L. Weber, and G. Coukos, "microRNAs

exhibit high frequency genomic alterations in human cancer.” Proc. Natl. Acad. Sci. U.S.A., vol. 103, no. 24, pp. 9136–9141, 2006.

L. Zhang, J. Huang, N. Yang, S. Liang, A. Barchetti, **A. Giannakakis**, M. G. Cadungog, A. O'Brien-Jenkins, M. Massobrio, K. F. Roby, D. Katsaros, P. Gimotty, R. Bützow, B. L. Weber, and G. Coukos, “Integrative genomic analysis of protein kinase C (PKC) family identifies PKC α as a biomarker and potential oncogene in ovarian carcinoma,” Cancer Res., vol. 66, no. 9, pp. 4627–4635, 2006.

REVIEWS

Functions, pathophysiology and current insights of exosomal endocrinology. D. Vlachakis, T. Mitsis, N. Nicolaidis, A. Efthimiadou, **A. Giannakakis**, F. Bacopoulou, G.P. Chrousos (2021). Molecular Medicine Reports, vol. 23, pp 1-5. DOI: 10.3892/mmr.2020.11664

miRNA genetic alterations in human cancers. **A. Giannakakis**, G. Coukos, A. Hatzigeorgiou, R. Sandaltzopoulos, and L. Zhang (2007). Expert Opin Biol Ther, vol. 7, pp. 1375–1386. DOI: 10.1517/14712598.7.9.1375

Reactive oxygen species and HIF-1 signaling in cancer, A. Galanis, A. Pappa, **A. Giannakakis**, E. Lanitis, D. Dangaj, and R. Sandaltzopoulos (2008). Cancer Lett., vol. 266, pp. 12–20. DOI: 10.1016/j.canlet.2008.02.028

SCIENTIFIC CONFERENCES, SEMINARS

15th Conference of the Hellenic Society for Computational Biology and Bioinformatics HSCBB21, “Expression of stress induced lncRNA JHDM1D-AS1 in Breast cancer patients and cell lines”, 10-11 December 2021, Athens-Greece.

70th Annual conference of the Hellenic Society of Biochemistry and Molecular Biology, “Long ncRNAs consistently detected in exosomes of human breastmilk are differentially expressed in preterm compared to term childbirth mothers”, 2019, Athens Greece.

6th Panhellenic Congress of the Hellenic Academy of Neuroimmunology, “Exosomal ncRNAs biomarkers and modifiers of cellular stress, potentially useful in diagnosing and treating of chronic inflammation and auto-immune/allergic disorders as cargo”, 2019, Thessaloniki, Greece.

Hellenic Association of Computational Biology and Bioinformatics – 17th European Conference on Computational Biology, “D-sORF: Accurate recognition of small coding ORFs ab initio”, 2018, Athens, Greece.

2nd Berlin Summer School in NGS Data Analysis, “Introduction to NGS RNA-Seq Data analysis DNA Variant Calling”, 2018, Berlin, Germany.

EASL: The International Liver Congress, “Upregulation of chromatin modifying genes in exhausted T cells from chronic HBV patients”, 2014, London, UK.

Keystone Symposia Non-Coding RNAs, “Identification and Functional Validation of Novel Non-coding RNAs as Regulators of the Cellular Stress Response to Oncogenic Insults”, Snowbird, 2012, Utah U.S.A.

3rd AACR International Conference: Molecular Diagnostics in Cancer Therapeutic Development, “miRNome integrative analysis in ovarian cancer”, 2008, Philadelphia, PA. U.S.A.

59th Meeting of Hellenic Society of Biochemistry and Molecular Biology, “Mir-210 is a regulator of gene expression under hypoxia and is deleted in human epithelial ovarian cancer”, 2007, Athens, Greece.

29th Scientific Conference of Hellenic Association for Biological Sciences, “Functional genomics for the identification of genes involved in the recruitment of lymphocytes in ovarian tumours”, 2007, Kavala, Greece.

58th Meeting of Hellenic Society of Biochemistry and Molecular Biology, “Analysis of miRNA expression profile in human ovarian cancer”, 2006, Patra, Greece.

Hepatology, “1292 Human hepatic myofibroblasts produce chemokines and adhesion molecules which promote the retention of lymphocytes during liver injury and fibrosis”, 2003, Massachusetts, Boston, U.S.A.

FELLOWSHIPS

2003 – 2006 "Heracleus" Ph.D Fellowship, Principal Investigator: Prof. Raphael Sandaltzopoulos, Dpt. Molecular Biology and Genetics, Democritus University of Thrace, Greece. «Functional genomic analysis: Identification of genes that are up-regulated in specific cancer types: investigation on their importance in cancer diagnostic and therapeutic approaches»

2013 – 2016 JCO Career Development Award (CDA), A-STAR, Singapore, Post-doctoral Fellowship, “Identification and Functional Validation of Novel Non-Coding RNAs as Regulators of the Cellular Stress Response to Oncogenic Insults”. Budget : 350,000 Singapore Dollars

DISSERTATION

Giannakakis A., (2008) Functional genomic analysis: Identification of genes that are up-regulated in specific cancer types: investigation on their importance in cancer diagnostic and therapeutic approaches. PhD *Thesis*, Democritus University of Thrace, Greece.

RESEARCH GRANTS

Project Title	Funding source	Period	Role of the PI
Omics technologies in the molecular characterization and enrichment of breastmilk for infants	“Competiveness, Entrepreneurship and Innovation”, EPAnEK of the NSRF 2014-2020	2020-2023	Scientific Investigator for Dpt. Molecular Biology & Genetics, DUTH Total Budget: 999,545 € Lab Budget: 136,050 €
InTechThrace: Integrated Technologies in biomedical research: multilevel biomarker analysis in Thrace	Support for Regional Excellence under “Competiveness, Entrepreneurship and Innovation”, EPAnEK of the NSRF 2014-2020	2020-2023	Scientific Investigator for the Pilot Program (ExoMarkers): Secreted exosomal markers in autoimmune disorders, Dpt. Molecular Biology & Genetics, DUTH Total Budget: 2.171.950 € Lab Budget: 120,000 €
PolypePharm: Improved Generic Polypeptide Drugs With Innovative Drug Formulation Techniques	Support for Regional Excellence under “Competiveness, Entrepreneurship and Innovation”, EPAnEK of the NSRF 2014-2020	2020-2023	Member of the Dpt. Molecular Biology & Genetics, DUTH Total Budget: 999,581 € Lab Budget: 340,785 €