

Eleni Papanikolaou Short CV

Eleni Papanikolaou is Manager of Hemopoietic Stem Cell Gene Therapy and Graft Engineering at the Department of Research and Development of Miltenyi Biotec, in Bergisch-Gladbach, Germany and a Lecturer of Gene Transfer and Gene Therapy of the Department of Basic Medical Sciences of the School of Medicine, at the National & Kapodistrian University of Athens (NKUA), in Athens, Greece. She graduated from the Department of Biology, Faculty of Sciences at the Aristotle University of Thessaloniki (AUTH) in 1995. She continued with her doctoral thesis in Molecular Virology at the Laboratory of Microbiology of the Department of Biology, AUTH, on the study and characterization of the products of the open reading frame U86 / 87 of human herpesvirus type 6 (Human Herpesvirus 6, HHV-6). After completing her doctorate, she continued her postdoctoral work at the Department of Medical Genetics of the University of Washington, in Seattle WA, USA (2003-2005), enrolled in the prestigious Program of Excellence in Gene Therapy (PEGT) under the supervision of Professor George Stamatoyannopoulos where she focused on genetic manipulation of hemopoietic stem cells. From 2005 to 2013 Dr Papanikolaou led a research group at the Gene Therapy Lab of the Biomedical Research Foundation of the Academy of Athens (www.bioacademy.gr) before becoming a Lecturer of Gene Therapy at the University of Athens. In May 2018 she joined the RnD Department of Miltenyi Biotec as a Manager of hemopoietic stem cell gene therapy and graft engineering.

Her research focuses on translating cutting-edge research into state-of-the-art products and services in the field of hemopoiesis and to develop best practices for novel gene and cell therapeutic approaches for hematological diseases based on classical gene addition or via genome editing.

Websites:

https://scholar.google.gr/citations?user=v_KutvMAAAAJ&hl=en

https://biology.med.uoa.gr/fileadmin/depts/med.uoa.gr/biology/uploads/Papanikolaou_Eleni_short_CV_NOV_2020_ENG_.pdf

CURRICULUM VITAE

Eleni Papanikolaou, PhD

DATE AND PLACE OF BIRTH: December 7, 1971, Athens, Greece
CITIZENSHIP: Greek
ADDRESS: 28 In der Auen, Bergisch-Gladbach, Germany
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LANGUAGES

Fluent in English and Modern Greek. Reading, speaking competence and translation competence in Italian. Adequate reading and speaking competence in French and German.

EDUCATION

2003-2005 Specialization in Gene Therapy
Division of Medical Genetics, Medical School, University of Washington, Seattle, USA

2003 Ph.D. (Doctoral Thesis) "summa cum laude" 10
Aristotle University of Thessaloniki, School of Biology, Thessaloniki, Greece

1995 B.Sc. (Biology Degree) "Cum Laude" 7.46
Aristotle University of Thessaloniki, School of Biology, Thessaloniki, Greece

BRIEF CHRONOLOGY OF EMPLOYMENT

2018- Manager (Strategic Lead), Hemopoietic Stem Cell Gene Therapy and Graft Engineering, **Department of Molecular Technologies and Stem Cell Therapy, Miltenyi Biotec**, Bergisch-Gladbach, Germany.

2013- Lecturer of Gene Therapy, **Department of Basic Medical Sciences, School of Medicine, National and Kapodistrian University of Athens**, Athens, Greece.

2005-2013 Senior Post Doctoral Researcher and co-PI, **Biomedical Research Foundation of the Academy of Athens** (BRFAA, <http://www.bioacademy.gr>), Department of Basic Research, **Laboratory of Cell and Gene Therapy**, Athens, Greece enrolled in several gene therapy related projects (see next paragraph entitled Research Support).

- 2003-2005** Postdoctoral Fellow, enrolled in a training program under the auspices of the *Program of Excellence in Gene Therapy (PEGT)*, **Division of Medical Genetics, University of Washington**, Seattle, USA.
- 1999-2003** Molecular Biologist, Laboratory of Microbiology, **Euromedica** Diagnostic Center, Thessaloniki, Greece
- 1996-1999** Researcher, Laboratory of General Microbiology, **Department of Genetics and Molecular Biology, School of Biology, Research Committee, Aristotle University of Thessaloniki (AUTH)**, Thessaloniki, Greece, enrolled in a research project entitled "*Infection, Latency and Reactivation of novel human herpesviruses in immunodeficient patient groups. Definition of markers and development of diagnostic reagents*".

PUBLICATIONS IN PEER REVIEWED SCIENTIFIC JOURNALS (Selected)

Total number of citations: 2044

H-index: 12 (i10-index: 13)

1. Markopoulou P, **Papanikolaou E**, Loukopoulou S, Galina P, Papassotiriou I, Sihanidou T. Elevated circulating endothelial microparticles (EMPs) in prepubertal children born preterm. *Pediatr Res.* 2021 Jul 20. doi: 10.1038/s41390-021-01655-8. Epub ahead of print. PMID: 34285352.
2. Markopoulou P, **Papanikolaou E**, Loukopoulou S, Galina P, Mantzou A, Sihanidou T. Increased circulating endothelial progenitor cells (EPCs) in prepubertal children born prematurely: a possible link between prematurity and cardiovascular risk. *Pediatr Res.* 2021 Jul;90(1):156-165. doi: 10.1038/s41390-020-01190-y. Epub 2020 Oct 10. PMID: 33038874
3. **Papanikolaou E**, Bosio A. The promise and hope of gene therapy *Front. Genome Editing*, 2021. <https://doi.org/10.3389/fgeed.2021.618346>, ISSN=2673-3439.
4. Karponi G, Kritas SK, Papadopoulou G, Akrioti EK, **Papanikolaou E**, Petridou E. Development of a CRISPR/Cas9 system against ruminant animal brucellosis. *BMC Vet Res.* 2019 Nov 27;15(1):422. doi: 10.1186/s12917-019-2179-z.
5. Karponi G, Kritas SK, **Papanikolaou E**, Petridou E. A Cellular Model of Infection with *Brucella melitensis* in Ovine Macrophages: Novel Insights for Intracellular Bacterial Detection. *Vet Sci.* 2019 Sep 3;6(3). pii: E71. doi: 10.3390/vetsci6030071.
6. Markopoulou P, **Papanikolaou E**, Analytis A, Zoumakis E, Sihanidou T. Preterm Birth as a Risk Factor for Metabolic Syndrome and Cardiovascular Disease in Adult Life: A Systematic Review and Meta-Analysis. *J Pediatr.* 2019 Jul;210:69-80.e5.
7. Drakopoulou E, Georgomanoli M, Lederer CW, Kleanthous M, Costa C, Bernadin O, Cosset FL, Voskaridou E, Verhoeyen E, **Papanikolaou E**, Anagnou NP. A Novel BaEVRIless-Pseudotyped γ -Globin Lentiviral Vector Drives High and Stable Fetal Hemoglobin Expression and Improves Thalassemic Erythropoiesis In Vitro. *Hum Gene Ther.* 2019 May;30(5):601-617.
8. **Papanikolaou E**, Paruzynski A, Kasampalidis I, Deichmann A, Stamateris E, Schmidt M, Kalle CV, Anagnou NP. *Cell Cycle Status of CD34⁺ Hemopoietic Stem Cells Determines*

Lentiviral Integration in Actively Transcribed and Development-related Genes. Mol Ther. 2015, 4: 683-96.

9. **Papanikolaou E**, Kontostathi G, Drakopoulou E, Georgomanoli M, Stamateris E, Vougas K, Vlahou A, Maloy A, Ware M, Anagnou NP. *Characterization and comparative performance of lentiviral vector preparations concentrated by either one-step ultrafiltration or ultracentrifugation .Virus Res.* 2013 Jul; 175(1):1-11. Epub 2013 Apr 11.
10. **Papanikolaou E**, Georgomanoli M, Stamateris E, Panetsos F, Karagiorga M, Grafakos S, Tsaftaridis P and Anagnou NP. *The New Self-Inactivating Lentiviral Vector for Thalassemia Gene Therapy Combining Two HPFH Activating Elements Corrects Human Thalassemic Hematopoietic Stem Cells. Hum Gene Ther.* 2012 Jan;23(1):15-31
11. Wilber A, Hargrove PW, Kim YS, Riberdy JM, Sankaran VG, **Papanikolaou E**, Georgomanoli M, Anagnou NP, Orkin SH, Nienhuis AW, Persons DA. *Therapeutic levels of fetal hemoglobin in erythroid progeny of {beta}-thalassemic CD34⁺ cells following lentiviral vector-mediated gene transfer. Blood.* 2011 Mar 10;117(10):2817-26.

HONORS (AWARDS AND DISTINCTIONS) (Selected)

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| 2018 May | “Choremio Prize” at the 56th Panhellenic Pediatric Congress for the project entitled “Endothelial dysfunction and cardiovascular risk in prematurely born babies - the role of endothelial microparticles and stem endothelial cells”, in Halkidiki, Greece |
| 2017 November | 1st Award of best poster at the 28th Annual Congress for the Hellenic Society of Hematology for the project entitled “Gene Therapy for multiple myeloma via oncolytic lentiviral vectors” in Athens, Greece |
| 2017 May | 1st Award of best presenting paper at the 2nd Annual Conference of the Greek Society for Gene Therapy and Regenerative Medicine for the project entitled “Genome editing as a therapeutic approach for molecular treatment of β -thalassemia”, in Athens, Greece |
| 2016 September | 1st Award of best presenting paper at the 1st Annual Conference of the Greek Society for Gene Therapy and Regenerative Medicine for the project entitled “The gene therapy lentiviral vector with the two regulatory HPFH elements efficiently corrects β -thalassemia <i>in vivo</i> in a mouse model” in Thessaloniki, Greece |
| 2016 May | 1st prize in Basic Research , at the 42nd Annual Conference of the Athens Medical Society (AMS) for the project entitled “Genome editing as a therapeutic approach for molecular treatment of β -thalassemia”, in Athens, Greece |
| 2015 May | 2nd Award in Basic Research , in the 41st Annual Conference of the Athens Medical Society (AMS) for the project entitled “Novel lentiviral vectors carrying alternative regulatory elements efficiently correct thalassemic and sickle cell disease phenotype” in Athens, Greece |
| 2014 January | The article published in Virus Research entitled “Characterization and comparative performance of lentiviral vector preparations concentrated by either one-step ultrafiltration or ultracentrifugation” serves as Key Scientific Article in Global Medical Discovery: http://globalmedicaldiscovery.com/key-scientific-articles/characterization-comparative-performance-lentiviral-vector- |

[preparations-concentrated-either-one-stepultrafiltration-ultracentrifugation/](#)

- 2013 May **The “STEM CELL” Award**, in the 39th Annual Conference of the Athens Medical Society (AMS) for the project entitled “Novel lentiviral vectors carrying alternative envelope glycoproteins achieve high levels of gene transfer and expression in CD34⁺ hematopoietic stem cells” in Athens, Greece
- 2010 October **Travel award** in the 17th Annual Conference of European Society of Gene and Cell Therapy (ESGCT) for the project entitled “Gene therapy for β -thalassemia using lentiviral vectors encoding either γ -globin or BCL11A/shRNA” in **Milan, Italy**.
- 2010 May **Oral presentation** in the 13th Annual Meeting of the American Society of Gene and Cell Therapy (ASGCT) for the project entitled “Therapeutic Fetal Hemoglobin Production in Erythroid Progeny of Normal and β -Thalassemic Human CD34⁺ Cells Using Lentiviral Vectors Encoding γ -Globin or shRNA To Down Modulate the Transcriptional Repressor BCL11A” in **Washington, DC, USA**.
- 2008 May **Oral presentation** in the 11th Annual Meeting of the American Society of Gene and Cell Therapy (ASGCT) for the project entitled “New Lentiviral Vectors for Gene Therapy of Thalassemia with the HPFH-2 Enhancer and the -117 HPFH Activating Mutation: Studies on Thalassemic Hematopoietic Stem Cells” in **Boston, MA, USA**.

PARTICIPATION IN PEERED MEETINGS PROCEEDINGS (Selected from last 5 years):

1. Swinerd G, Mittelstaet J, Engert F, Dapa S, Lock D, Dzionek J, Olevska V, Bosio A, Schambach A, Falk C, Papanikolaou E. Myeloid Conditioning with CAR-T Cells to Enable Donor Stem Cell Engraftment without Chemotherapy or Irradiation. **26th Annual Congress of the American Society of Cell and Gene Therapy, May 2022. Mol.Ther.** Vol 30, Issue 4, Supplement 1, pp 325. Abstract no: 691.
2. Bissels U, Johnston I, Reinartz S, Brams D, Aivazidou F, Krenz D, Bomhard IV, Knöbel S, Bosio A, **Papanikolaou E**. Automation in hemopoietic stem cell gene therapy: results of a head-to-head comparison of a manual vs an automated procedure. **23rd Annual Congress of the American Society of Cell and Gene Therapy, 12-15 May 2020**, Virtual, Abstract no 883.
3. Dzionek J, Soltenborn S, Stenzel J, Thießen C, Hebbeker F, Kauling B, Meißner R, Kaltz N, Langeveld K, Malchow M, Assenmacher M, Bosio A and **Papanikolaou E**. A novel integrated process for depletion TCRab⁺, CD19⁺ and CD45RA⁺ cells from apheresis products using the CliniMACS Prodigy[®]. *Cytotherapy*, **May 2019**, 21: S60-S61,
4. Bissels U, Johnston I, Reinartz S, Brams D, Aivazidou F, Krenz D, Bomhard IV, Knöbel S, Bosio A, **Papanikolaou E**. Automation in hemopoietic stem cell gene therapy: results of a head-to-head comparison of a manual vs an automated procedure. **27th Annual Congress of the European Society of Cell and Gene Therapy, 22-25 October, 2019**, Barcelona, Spain, P197.

5. Armenteros -Monterroso E, Buckland KF, Diasakou A, Pereira I, Leon-Rico D, Reinartz S, Krenz D, Bissels U, Johnston I, **Papanikolaou E**, Booth C, Thrasher AJ. Comparison of the CliniMACS Plus and the CliniMACS Prodigy for CD34 enrichment of mobilised peripheral blood stem cells (mPBSC). *27th Annual Congress of the European Society of Cell and Gene Therapy, 22-25 October, 2019*, Barcelona, Spain, P236.
6. Kalafati E, Drakopoulou E, Angelopoulou MK, Verhoeyen E, Cosset FL, Konstantopoulos K, Anagnou NP, **Papanikolaou E**. The novel oncolytic lentiviral vector expressing IFN β and pseudotyped with the measles virus HF glycoproteins displays therapeutic efficacy as a gene therapy-based approach for multiple myeloma. *27th Annual Congress of the European Society of Cell and Gene Therapy, 22-25 October, 2019*, Barcelona, Spain, P141.
7. Bissels U, Aivazidou F, Knöbel S, Bosio A, **Papanikolaou E**. A novel systematic CFU assay for hemopoietic stem and progenitor cells combined with user independent analysis. *7th Annual Congress of the German Stem Cell Network, 23-25 September, 2019*, Berlin, Germany, P057.
8. **Papanikolaou E**, Bissels U, Knöbel S, Bosio A. An automated process for lentiviral transduction of CD34+ cells in a GMP-compliant closed system. Gene Therapy - Ready for the Market? *30-31 January 2019* DECHEMA-Haus, Frankfurt/Main, Germany.
9. Mpountouni P, **Papanikolaou E**, Georgomanoli M, Drakopoulou E, Lalou E, Voskaridou E, Angelopoulou M, Konstantopoulos K, and Anagnou NP. Genome editing as a therapeutic approach for molecular treatment of β -thalassemia. 2nd Annual Conference of the Greek Society for Gene Therapy and Regenerative Medicine, *May 26-27, 2017*, Athens, Greece.
10. Kalafati E, **Papanikolaou E**, Angelopoulou M, Konstantopoulos K, and Anagnou NP. Gene Therapy for Multiple Myeloma. 43rd Annual Conference of the Athens Medical Society (AMS), *May 10-13 2017*, Athens, Greece.

SCIENTIFIC SOCIETIES

- Founding Member of the Greek Society of Gene Therapy and Regenerative Medicine
- American Society of Hematology
- American Society of Gene and Cell Therapy
- European Society of Gene and Cell Therapy
- Hellenic Society for Hematology
- Hellenic Society of Biomedical and Laboratory Animal Science