

Eleni Papanikolaou is Lecturer of Gene Transfer and Gene Therapy of the Laboratory of Biology at National & Kapodistrian University of Athens (NKUA), School of Medicine, and Affiliated Investigator of Hemopoietic Stem Cell Gene Therapy and Graft Engineering at the Department of Research and Development of the MACS Academy at Miltenyi Biotec, in Bergisch-Gladbach, Germany.



She performed her PhD training at the Aristotle University of Thessaloniki and 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, founder of the American Society of Gene and Cell Therapy (ASGCT). 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 before becoming a Lecturer of Gene Therapy at the University of Athens.

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. Among various translational research studies, a special emphasis is given to thalassemia, a disease of special interest for Greece, not only because of significant patient morbidity but for the enormous financial burden on the health system, as well. Dr Papanikolaou's work is reflected in >20 publications that have received >1600 citations and *h*-index=10 (Google scholar, 2/11/2020). She has given several lectures as an invited speaker at national and international conferences, universities and biotech companies and has trained several junior scientists. She has served as ad hoc reviewer for various scientific journals (e.g. Molecular Therapy, Gene and Cell Therapy Insights, Metabolism, Continuing Cardiology Education etc.) and as an expert evaluator for the European Commission (William Harvey International Translational Research Academy, Horizon 2020), and National Research Grant Funding Agencies of Greece and Cyprus. She has received more than 15 national and international awards and has served as co-PI of at least two European Commission-funded collaborative research programmes involving gene therapy laboratories of excellence across Europe.

Professor Papanikolaou teaches Biology and Genetics to undergraduate medical students and she also teaches various aspects of Gene Therapy in five doctoral programs of NKUA.

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Representative Publications

1. Markopoulou P, Papanikolaou E, Loukopoulou S, Galina P, Mantzou A, Siahnidou T. Increased circulating endothelial progenitor cells (EPCs) in prepubertal children born prematurely: a possible link between prematurity and cardiovascular risk. *Pediatr Res.* 2020 Oct 10. doi: 10.1038/s41390-020-01190-y. Epub ahead of print. PMID: 33038874.

2. 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.
3. 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.
4. Markopoulou P, Papanikolaou E, Analytis A, Zoumakis E, Siahaniidou 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.
5. Drakopoulou E, Georgomanoli M, Lederer CW, Kleanthous M, Costa C, Bernadin O, Cosset FL, Voskaridou E, Verhoeyen E, Papanikolaou E, Anagnou NP. A Novel BaEVRless-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.
6. Karponi G, Kritas S, Petridou E, Papanikolaou E. Efficient transduction and expansion of ovine macrophages for gene therapy implementations. *Vet Sci.* 18: 57-70, 2018.
7. 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.* 4: 683-96, 2015.
8. Drakopoulou E, Papanikolaou E, Georgomanoli M, Anagnou NP. Towards more successful gene therapy clinical trials for β -Thalassemia. *Curr Mol Med.* 13: 1-17, 2013.
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.* 175: 1-11, 2013.
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.* 23: 15-31, 2012.
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 β -thalassemic CD34⁺ cells following lentiviral vector-mediated gene transfer. *Blood.* 117: 2817-26, 2011.
12. Papanikolaou E, Anagnou NP. Major challenges for gene therapy of thalassemia and sickle cell disease. *Curr Gene Ther.* 5: 404-12, 2010.
13. Papanikolaou E, Kouvatsis V, Dimitriadis G, Inoue N, and Arsenakis M: Identification and characterization of the gene products of open reading frame U86/87 of human herpesvirus 6. *Virus Res.* 89: 89-101, 2002.