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The proposed case-control study (participants that achieved abstinence for at least 6 months after smoking cessation versus participants that did not achieve abstinence) aims to identify novel genetically-supported drug targets for smoking cessation and to correlate/associate changes in those druggable protein targets with: (a) motivation to quit smoking and (b) vulnerability to relapse following abstinence.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie Grant Agreement No 101034403

Andrea holds a B.Sc. in Molecular Biology & Genetics from Democritus University of Thrace, Greece, an M.Sc. in Human Molecular Genetics from Imperial College London, United Kingdom, and a Ph.D. in Medical Genetics from The Cyprus Institute of Neurology and Genetics, Cyprus Her current research focuses on exploring genetic and molecular therapeutic targets for smoking addiction. Additionally, she is actively involved in other epidemiological research projects that investigate neurological and psychiatric diseases, as well as other complex traits and their underlying biological mechanisms.

Research Interests: Her research interests intersect genetics, epidemiology, and biostatistics, with a central focus on advancing our understanding of complex diseases, particularly within the realm of neuropsychiatric conditions, and the interplay of genetic and environmental determinants. Over the years, she has actively engaged in a diverse array of projects, spanning genetic epidemiology investigations involving mendelian randomization, polygenic risk scores, and genome- and protein-wide association analyses for complex diseases, including neurodegenerative and cardiovascular conditions. Her work also encompasses conducting observational studies that entail participant recruitment. She is deeply passionate about unraveling the genetic and environmental factors that contribute to complex health issues and leveraging this knowledge to shape public health interventions and inform medical practices.

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Brief overview of project: Most individuals that quit smoking relapse following abstinence, with only ~15% of abstinent individuals reaching long-term abstinence of more than 6-12 months. This highlights the need for the identification of new drug targets and the development of more effective pharmacotherapies for the treatment of nicotine addiction and the maintenance of long-term abstinence. The proposed case-control study (participants that achieved abstinence for at least 6 months after smoking cessation versus participants that did not achieve abstinence) aims to identify novel genetically-supported drug targets for smoking cessation and to correlate/associate changes in those druggable protein targets with: (a) motivation to quit smoking and (b) vulnerability to relapse following abstinence. Potential druggable protein targets are expected to be identified using drug repurposing Mendelian randomization approach and confirmed by assessing whether methylation levels in the identified genes are associated with motivation to quit smoking, smoking relapse vulnerability and/or duration of abstinence.

The Researcher will combine her knowledge in genetic epidemiology with her coding and biostatistical analysis skills, as well as her expertise in molecular biology wet-lab techniques for the identification of epigenetic biomarkers for smoking cessation treatment.

Primary supervisor: Panos Zanos (Director of the Translational Neuropharmacology Lab at the Department of Psychology, University of Cyprus) Secondary supervisor: Andreas Chatzittofis (Assistant Professor of Psychiatry, Medical School, University of Cyprus)

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