9th International Conference and Exhibition on
Metabolomics and Systems Biology
August 29-30, 2017 Prague, Czech Republic

Massimo S Fiandaca et al., Biochem Mol biol J, 3:2
DOI: 10.21767/2471-8084-C1-002

Blood-based metabolomic biomarkers for human neurological disorders

Massimo S Fiandaca[1], Mark Mapstone[1], Amin Mahmoodi[1], Thomas Gross[1], Amrita K Cheema[2], Fabio Macciardi[1], Kian Merchant-Borna[3], Jeff Bazarian[3] and **Howard J Federoff[1]**
[1]University of California, Irvine, USA
[2]Georgetown University, USA
[3]University of Rochester Medical Center, USA

For many human maladies, especially neurodegenerative disorders (e.g., Alzheimer's disease, AD, and Parkinson's disease, PD) the ability to predict disease risk during asymptomatic stages is essential for earlier and more efficacious interventions. Blood-based biomarkers for AD (and PD), once defined and validated, may facilitate the participation of at-risk asymptomatic individuals in therapeutic clinical trials, and thereby increase the potential for successful prevention and/or disease modification. In conditions such as mild traumatic brain injury (mTBI), relevant blood bio-signatures could provide unbiased diagnostics that significantly improve clinical decision-making and improved treatments. Blood-based metabolomic biomarkers may offer such diagnostic and therapeutic potential in both AD and mTBI, as evidenced by our recent work. In this seminar, I plan to discuss our group's approaches to blood-based metabolomic biomarker development and present results from our most recent metabolomic investigations related to AD and mTBI. We are encouraged by the potential provided by both untargeted and targeted metabolomic platforms in defining annotated species that are germane to the respective clinical conditions. We also provide caution to those exploring this area of research since there are many confounding factors that need close scrutiny in an effort to maximize clinical utility.

Biography

Massimo S Fiandaca is a Neuroscientist and Associate Professor in the Department of Neurology and Neurological Surgery at University of California Irvine (UCI). As Co-director of the Federoff Translational Laboratory and Biorepository (TLaB) at UCI, he is currently focused on blood-based biomarkers related to neurological disorders. Through established local, national, and international collaborations, he and his colleagues hope to impact the development of relevant blood-based biomarkers for a variety of conditions affecting the nervous system. He is a board certified Neurological Surgeon, who retired from surgical practice after 25 years, and returned to full-time academic research and teaching. His past research experiences have focused on direct brain delivery of therapeutics for neurodegenerative disorders and neuro-oncology, including cellular and tissue transplantation, viral-vector based therapeutic gene delivery, MRI-directed convection-enhanced delivery, and nano-liposomal therapeutics.

mfiandac@uci.edu

Notes: