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Clinical metabolomics: Creating patient and population centric analytical tools for drug development

It is commonly accepted that altered metabolic states represent the impetus of the vast majority of chronic and acute disease states resulting in a significant impact on the U.S. Healthcare system. Decades of research have revealed that metabolism is not a self-regulating network operating independently and is integrated into every other cellular process and organ system. Therefore, global monitoring of metabolic processes is required for more comprehensive understanding of the initiation and perpetuation of disease states. Mass spectrometry based metabolomics, in particular, demonstrates tremendous promise in delivering high throughput quantitative information on alterations in metabolism associated with disease onset/progression and response to pharmaceutical intervention. Recent advances in mass spectrometry and informatics tools have facilitated emerging omics platforms capable of translating biological output into viable therapeutic candidates and assist in stratifying patient populations. At BERG, we have implemented an industrial level high throughput metabolomics platform providing both high quality and depth of information allowing for reliable and broadest capture of the metabolome for the pre-clinical and clinical matrixes analyzed. Global metabolomics platform dedicated for theranostic and clinical studies as well as tracer metabolomics are harvested to facilitate CDx biomarkers discovery in a unique way. Highlights of the BERG's in-depth patient stratification approaches as well as biology based drugs will be presented.

Biography

Vladimir Tolstikov has completed his PhD at Institute of Chemical Means for Plant Protection, Moscow, Russia. He is pioneer in HILIC separations development applied to metabolomics. He is the Director of Metabolomics at BERG. He has published more than 50 papers in reputed journals, five book chapters and has been serving as an Editorial Board Member of MDPI *Metabolites*.

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