OMICS International
conferenceseries.com

Global Summit on

Steroids

July 13-15, 2015   Baltimore, USA

Informatics to support high-throughput research in steroid metabolomics

Edward Vitkin, Amir Ben-Dor and Zohar Yakhini
Israel Institute of Technology, Israel

Modern biomedical research is gradually transforming from case-study based to high-throughput based approach. First is very intuitive for practitioners, since it requires study of only a small group of patients. However, to receive a more complete picture of steroid metabolomics behavior, we want to analyze multiple subjects, as well as tens or even hundreds of various urinary, saliva and blood metabolites.The informatics in typical steroid metabolomics research spans several stages: (i) data collection, (ii) data normalization, (iii) statistical interpretation and (iiii) results visualization. High-throughput studies scale up all the existing informatics challenges and introduce several novel ones. Here we address each of the four data analysis stages with emphasis on data normalization and results visualization stages. For the first we present a peer-group normalization methodology, which can efficiently handle versatile data such as steroid measurements in children. For the second we present urine-to-blood visualization approach which allows integration of all relevant data in the context of the traditional representation of the steroidogenesis pathway and of related enzyme activity. The utility of the proposed techniques will be demonstrated on two use case studies. First we present identification of fingerprints of congenital adrenal hyperplasia due to 21-hydroxylase deficiency in children. Second, we describe hypothesis generating study to identify various factors for childhood obesity.

Biography

Edward Vitkin holds an MSc degree from Technion – Israel Institute of Technology and now he is studying for PhD degree under supervision of Dr. Zohar Yakhiniin Computer Science faculty of Technion – Israel Institute of Technology. He contributed too many research projects in IBM Research Labs and to collaborations with Agilent Labs and the Rambam Health Care Campus hospital. He has published 7 papers and has several patent applications in various fields from Systems Biology to Medical Informatics. During his research career he received several awards including Best Student Paper Award at MedInfo 2010 Conference.

edward.vitkin@gmail.com

Notes:

J Steroids Hormon Sci
ISSN:2157-7536 JSHS, an open access journal

Steroids Summit-2015
July 13-15, 2015

Volume 6 Issue 3

Page 69