Grzegorz Bulaj, Transl Med 2014, 4:3
http://dx.doi.org/10.4172/2161-1025.S1.012

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Translational Medicine
November 03-05, 2014 Las Vegas, USA

Biofeedback-coupled digital health technologies for the treatment of chronic diseases, and opportunities for drug-device translational research

Grzegorz Bulaj
University of Utah, USA

Mobile medical applications and digital health technologies have been merging with health care and medicine practice. The US Food and Drug Administration has already approved or cleared over 75 mobile medical apps, including the mobile therapy for diabetes, and a motion capture game system for patients with stroke or traumatic brain injury. The development of mobile medical apps and video game therapies for chronic diseases creates opportunities to combine medical device software with drug-based therapies. Neurofeedback- and biofeedback-enhanced game therapies for autism spectrum disorders illustrate how such innovative non-pharmacological modalities can maximize digital health technologies by concurrent monitoring of heart rate variability, blood pressure, skin conductance or EEG. Translational research on biofeedback-coupled delivery and streaming of clinically-beneficial digital content (including music, games and apps) will lead to optimized treatments for specific diseases including depression, anxiety, schizophrenia, pain, epilepsy, cancer or neurodegenerative disorders. In this presentation, the author will describe the unique interface between drugs and medical device software, including benefits for developing combination therapies and products comprising specific drugs and medical device software. The author will discuss innovative drug-device therapy strategies for epilepsy, neuropathic pain and other chronic disorders, including preclinical studies which employ enriched environment. This presentation also illustrates why integration of drug-based therapies (including generic drugs, or those under preclinical or clinical development) with copyrighted content of medical device software may offer the patent-independent intellectual property protection of a combination treatment which can last for over 70 years. In conclusion, disruptive technologies such as mobile and digital health are advancing at faster pace, as compared to that of traditional drug development process. Electronic and digital technologies provide new R&D opportunities to innovate pharmacotherapies while establishing long-lasting intellectual property of new drug-digital therapies.

Biography

Grzegorz Bulaj is an Associate Professor of Medicinal Chemistry in the College of Pharmacy at the University of Utah. He co-founded the University spinoff company, NeuroAdjuvants, specialized in preclinical development of anticonvulsant neuropeptides that cross the blood-brain barrier. As a Director of Peptide Chemistry in Cognetix, Inc., he was involved in drug discovery, preclinical and clinical development projects. He received his PhD degree in Biochemistry from the University of Wroclaw, Poland. His research is focused on innovative drug-device combination therapies which integrate drug-based targeting of a disease and medical device-based behavioral targeting of comorbidities, medication non-adherence, and disease self-management.

Grzegorz.Bulaj@hsc.utah.edu