GLOBAL GATORS SYMPOSIUM

BILBAO SPAIN

Matthias Fueth

Bio

Matthias Fuethearned a degree in pharmacy from theTechnische Universität Braunschweig, Germany in2005 and received his EUPharmacylicense in 2006.He practiced as a pharmacist from 2005 to 2007. Afterinternships in pharmaceutical companies, in theDepartment of Pharmaceutics at the University ofFlorida and in a community pharmacy, he joined thePhD program in the Department of Pharmaceutics,College of Pharmacy of the University of Florida,working under the supervision of Dr Sihong Song in Aug 2007. Matthias Fueth receivedhis Doctor of Philosophy (Ph.D.) degree in Pharmaceutical Sciences in Dec 2011. In Jan2012 he joined Dr. Hartmut Derendorf's research group as a post-doctoral associate inthe Department of Pharmaceutics. He joined first Roche Diagnostics GmbH in Penzberg,Germany in 2013 as a PDM Project Leader for Biologics and moved to F. Hoffmann-LaRoche Ltd. in 2016 as a DPL (DMPK/PD project leader). In his current position he acts asaPK/PD expert leading multi-functional research teams responsible for the evaluationof new biological entities (NBE) including standard and bispecific monoclonalantibodies as well as antibody fragments. He applies PK and PKPD expertise to theselection and characterization of NBEs from entry into portfolio (EIP) to marketauthorization within non-clinical development.

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Abstract

Hesperos created and developed the Human-on-a-Chip® platform of microphysiological systems (MPS), in vitro-based devices recapitulating physiological conditions for disease modeling, drug discovery, and personalized medicine. The Human-on-a-Chip platform focuses on measuring functional changes in organ constructs in multi-organ devices with a common recirculating medium, enabling interactions among the different organ modules, which are especially important when effects due to compound metabolism, disease-related mutations, or soluble factor production are not previously well established. A Human-on-a-Chip system containing two barrier tissues, the gastrointestinal tract and blood brain barrier, was developed for modeling of oral and intravenous administration of drug compounds with associated changes in central nervous system function. Pharmacokinetic modeling of the transport of three drugs through the system based on experimental data established the baseline model for use with PKPD modeling. This system was expanded to include a liver construct for hepatic metabolism and an active network of cortical neurons in the CNS module for evaluating echinacea extract and one of the primary active components, dodeca-2e 4e 8z 10e/z-tetraenoic-acid-isobutylamide, on amelioration of stress-induced deficits in long term potentiation.