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Innovative approaches to expand medicinal chemistry space

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Abstract

Drug discovery proceeds as a multi-stage process, from the identification of a potential therapeutic target through lead generation, lead optimization, preclinical evaluation to clinical testing, before a new medicine is marketed. Uniting synthetically accessible chemical space with disease relevant biological space represents a significant challenge. Industrial chemical biology approaches have been recognized by pharmaceutical companies as a novel strategy in drug discovery. It encompasses an organizational structure composed of dedicated, specialized teams, thereby enabling a detailed analysis and an optimal use of the chemical and biological space of target classes. The benefits of an industrial chemical biology approaches in combination with automated parallel synthesis and purification will be discussed. A case study for the discovery of novel GPCRs ligands with a focus on the therapeutic areas of Inflammation and Neurobiology will also be presented.

Biography

Dr. Rossé has been involved in drug discovery research and development for more than 15 years. He is currently Associate Director, Structure Guided Chemistry, at Dart Neuroscience and also serves as Adjunct Associate Professor at Drexel University as well as Adjunct Professor in Medicinal Chemistry at the Pennsylvania Drug Discovery Institute. Prior he functioned in leadership and scientific positions in medicinal chemistry with Cephalon, Sanofi and F. Hoffman-La Roche. During his industrial tenure, he led multidisciplinary teams and invented multiple pre-clinical candidates and compound lead series spanning a wide range of therapeutic indications. These include CNS (cognition, schizophrenia, alzheimer's disease), Inflammation, Metabolism, Oncology, Cardiovascular disease and Antibacterial agents. Dr. Rossé's career is also characterized by implementation of innovative high throughput technology platforms in the area of small molecules and peptides drug discovery, analytical chemistry and data management that increased productivity and accelerated the drug discovery process. Dr. Rossé is a distinguished speaker at business meetings in US and Europe and has authored 40+ patents and publications. He received the Ph.D. degree in chemistry from the University of Basel in Switzerland and postdoctoral training at Stanford University.