

File enhancement with enabling technologies: MCRs and drug discovery

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Developments in the search for novel pharmacological agents over the last 15 years have focused on the preparation of chemical libraries as sources for new leads. To aid this, a plethora of automation technologies emerged to fuel lead discovery engines of drug discovery organizations. Concurrently, a multitude of efficient, diversity or function-oriented solution phase chemical methodologies also appeared, enabling the relatively facile construction of successful lead generation libraries with low FTE input and little capital expenditure. One key driver of these efficiency gains has been the burgeoning field of research in multi-component reactions (MCRs). These transformations provide efficient routes to chemotypes that have found broad utility in therapeutics, biological tools, agrochemicals and even material sciences. Functional modification of MCR products has further increased the 'tool box' of available chemotypes and associated diversity space. One particular branch of this chemistry, namely post condensation modifications of IMCRs (isocyanide based multicomponent reactions) constitutes the bulk of this presentation and will be discussed along with successful case studies of value creation.

Biography

Christopher Hulme joined Sanofi-Aventis in 1994, leading the 'Enabling Chemical Methodology Group', and developing an interest in applying MCRs to drug discovery. From 1999-2004, he held a variety of leadership positions at Amgen, including responsibility for the HTMC group. In 2004, he joined Eli Lilly and found a new high-throughput chemistry initiative. In 2007, he accepted an Associate Professor position at the College of Pharmacy, University of Arizona being promoted to full Professor in 2010. His research interests span small molecule inhibitors of kinases and NHRs, to the development of chemical methodologies that expedite the lead generation process. To date, he is credited with more than 175 publications, patents and invited lectures and is the current Director of Medicinal Chemistry at Bio5 Oro Valley.

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