

EXPANDING THE MEDICINAL CHEMISTRY SYNTHETIC TOOLBOX

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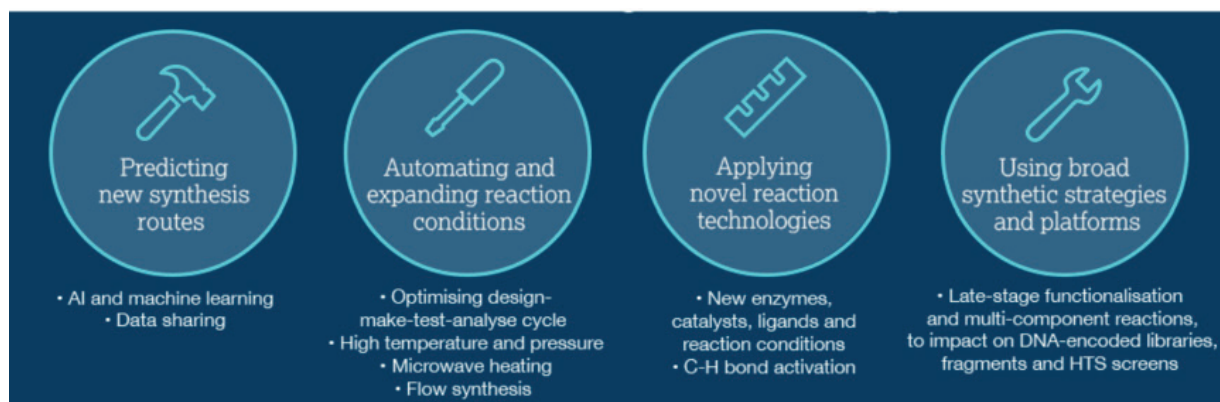
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The key objectives of medicinal chemistry are to efficiently design and synthesize bioactive compounds that lead to safe and efficacious drugs, which can ultimately be produced on a large scale. Most medicinal chemistry programs benefit from screening collections populated by a range of molecules derived from a set of known and robust chemistry reactions. A number of papers analyzed the role of synthetic organic chemistry in drug discovery, suggesting that the same set of reactions is used in most of the optimizations and the impact of many new methodologies is limited. Starting from the known limitations of reaction parameters, synthesis design tools, synthetic strategies and innovative chemistries, we highlight opportunities for expansion of medicinal chemists' synthetic toolbox [1]. More intense crosstalk between synthetic and medicinal chemists in industry and academia should enable enhanced impact of new methodologies through widening of synthetic diversity in future drug discovery.

Drug discovery is not a numbers game. More elaborated chemistry will not give more drugs. We should expand the synthetic toolbox of medicinal chemistry to prepare designed compounds, more efficiently and faster. Come and see how enabling technologies, new chemistries and synthesis strategies could help to deliver the right compound at the right time.



Download the free poster to display in offices and laboratories highlighting the importance of expanding the medicinal chemistry synthetic toolbox and stimulating debate on the most effective ways to do that: http://bit.ly/NRDD_Poster

References:

[1] Jonas Boström, Dean G. Brown, Robert J. Young & György M. Keserü: Expanding the medicinal chemistry synthetic toolbox. *Nature Rev. Drug Discov.* 17, 709–727 (2018).