

A Brief Summary on the Advancement of Drug Discovery in the Modern Phase from the Perspective of Technology and Medicinal Chemistry

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Abstract

The advancements in big pharma's use of related drug discovery research, synthetic and medicinal chemistry, and other fields during the past few decades are discussed. More enormous societal transformations, such as the computer, the internet, and globalisation, have influenced these. Thoughts on the future of medicinal chemistry are also covered, including the potential of outsourcing and sharing the costs and risks of drug discovery. Algorithm utilisation in data analysis and medication creation, as well as the ongoing effects of big data and easy access to mighty computational power, are also discussed. The communication styles of the upcoming generation of medicinal chemists will be influenced by social media, the effects of being continuously linked, and data.

Keywords: Medicinal Chemistry; Drug Discovery; Instrumental Technology; Pharmaceutical Science; Computer Application

Drug discovery in the modern phase

It is a brief discussion on computers, the internet and instruments and medicinal chemistry and drug discovery research have changed in big pharma over the past few decades [1]. Although the foundations of medicinal chemistry remain primarily unchanged, technology (the computer and the internet) and globalisation have drastically changed many of the methods utilised in just a few decades [2]. The instrument and technique for the actual utilise in the field of drug discovery are described in the figure 1 [1,3]. The instruments like NMR, HPLC,UV,IR, LCMS, GCMS etc. All the specific instruments and Techniques have unique qualities [1,4]. Still, the aim of all is to remain unchanged. In this process, computers, the internet and software also play an uncountable help in modern times (Drug discovery) [5]. These things make the process faster and more accurate than in the past decade [1,4,6].

Figure 1: Instruments used for Research and Development.

Relations between medicinal chemistry and drug discovery technology

As you know, in drug discovery, all pharmaceutical specialisations play their role on a big platform [7,8]. Still, during drug discovery, the field of medicinal chemistry collaborates with researchers from multiple relevant biologic lines and employs a variety of standard stages and methods. Some select the biological target and identify the first hits and leads. Other steps include using computers and computational chemistry [8,9], designing compounds and developing dependable SAR in the lead-optimisation process, screening the synthesised compounds in biological assays, performing pharmacokinetic, pharmacodynamic (PK/PD) and in vivo studies etc [10-12].

Concluding Remarks

Although the foundations of medicinal chemistry remain primarily unchanged, technology (the computer and the internet) and globalisation have drastically changed many of the methods utilised in just a few decades. Has the industry's productivity changed due to these adjustments in the quantity and calibre of newly released medicines? Although everyone earnestly believes the efficacy and safety of new medications are, on average, more significant than before, it is impossible to conclude that pharmaceutical production has significantly grown. The future of medicinal chemistry is bright and will continue to be a key instrument in developing new drugs, if not the most important. Although the position of the medicinal chemist is safe, it is unclear exactly where spontaneous medicinal chemistry will occur.

Conflicts of Interest

The authors do not have any conflicts of interest to declare.

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