Safety Evaluation of Synthetic Compounds- Key role in Drug Discovery

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ABSTRACT

Bringing drugs from bench to market is a multistage complex process with intricate involvement of investors, industry, academia and regulatory authorities. To bring a successful drug candidate through the drug discovery and development process several years of expertise efforts and huge fund is required. Where inherent drug discovery and development process based challenges effect the drug productivity, widespread industry focuses also on other factors like pipeline quantity, heightened regulatory scrutiny and an increasing focus of pharmaceutical company investment in areas of unmet medical needs, unexploited biological mechanisms where there is a high risk of failure add to the drug attrition rates. Apart from the potential medicinal/bioactivity of the lead compounds, the predominating factor resides in ensuring safety and lack of toxicity of the drug candidates. Hence, this article identifies the key stages of drug discovery and development process and attempts to review the various approaches to mitigate the loss of potential drug candidate at each stage.

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