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AI Advancements and Their Transformative Role in Medicinal Chemistry and Drug Development

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ABSTRACT

Artificial intelligence (AI) has progressed very rapidly in this decade. This rapid development is supported by advances in hardware, software, and the abundance of data (Big Data). Ai's utilization has been worked on in various fields such as medicine, weather forecasting, the transportation industry, image and voice recognition, customer management, and others. The development of research in the field of medicinal chemistry always follows the available technology. Extraction and isolation of chemical compounds, organic chemical synthesis, and rational drug design through QSAR have been used in medicinal chemistry. The QSAR method has started from using statistics in the early era of using computers in research to the use of machine learning and artificial intelligence today. Artificial intelligence technology has become a significant concern in drug development by both researchers in universities and industry. Drug repurposing or drug repositioning methods are currently one of the choices due to advances in network pharmacology that utilize abundant bioinformatics and cheminformatics data. In the future, rational drug design techniques will be greatly facilitated by various technological advancements.

Keywords: AI, drug, forecast, QSAR