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Artificial Intelligence in Pharmacy: Revolutionizing Drug Discovery, Formulation, and Personalized Medicine

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Abstract: *The integration of Artificial Intelligence (AI) in pharmacy has significantly transformed the landscape of drug discovery, formulation, and personalized medicine. AI-driven technologies, including machine learning, deep learning, and natural language processing, have streamlined the drug discovery process, enabling faster identification of potential drug candidates and the optimization of formulations. AI applications also extend to predicting patient-specific drug responses, thus paving the way for personalized therapies that offer improved efficacy and reduced adverse effects. Additionally, AI algorithms assist in the analysis of vast clinical data, supporting the development of targeted treatments. This review explores the diverse applications of AI in pharmacy, its potential to enhance drug development timelines, and its implications for the future of pharmaceutical sciences. Challenges and ethical considerations in implementing AI-based systems are also discussed, along with future directions for research and development*

Keywords: Artificial Intelligence, Pharmacy, Drug Discovery, Formulation, Personalized Medicine, Machine Learning, Deep Learning, Pharmaceutical Sciences, Drug Development, Clinical Data Analysis

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