

# Green and Sustainable Strategies for Efficient Drug Synthesis: A Review

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**Abstract:** *The rapid development of new chemical entities has led to increasing environmental concerns due to the harsh synthetic methods employed in their production. These challenges highlight the necessity of green chemistry, which promotes sustainable and environmentally friendly approaches to drug synthesis. Also referred to as sustainable chemistry, this field emphasizes methods that optimize energy efficiency, reduce waste generation, and utilize renewable resources. Various green synthesis techniques, such as microwave-assisted synthesis, solvent-free synthesis, and sonochemical synthesis, offer eco-friendly alternatives while maintaining high efficiency. This review provides an overview of these green synthetic approaches, discussing their advantages and limitations to support the advancement of sustainable drug development.*

**Keywords:** Green chemistry, Sustainable chemistry, Green synthesis, Microwave-assisted synthesis, Solvent-free synthesis, Sonochemical synthesis

