

Introduction

Catharanthus roseus remains a vital subject in pharmacological research due to its rich profile of bioactive alkaloids, particularly in oncology. This study evaluates the plant's evolving research landscape by analyzing global trends, disease targets, and drug developments. By narrowing the focus to the most recent literature, we aim to synthesize the latest advancements and geographic shifts in its study, providing a clear overview of its modern therapeutic significance.



Methodology

A systematic literature search was conducted via PubMed using two strategies: a broad search for "*Catharanthus roseus*" (6,503 results) and a targeted search for "*Catharanthus roseus* AND Cancer" (2,931 results). The data was filtered for the period between January 1, 2010, and October 31, 2025. To capture the most recent advancements, only the **top 50 of the most recent studies** were selected for document analysis. This process involved extracting specific data to generate three distinct reports for both search strategies: the geographic distribution of research by country, a mapping of mentioned diseases, and an inventory of associated drugs. The final data was synthesized into summary tables for comparative analysis.

Results

To evaluate the findings from both search strategies, we performed a three-tier analysis focusing on global and clinical trends. First, we mapped geographic distribution by extracting country [Fig-1(a) & 1(b)] mentions across all article sections to identify key research hubs. Second in [Fig-2(a) & 2(b)], we profiled the diseases mentioned to compare broad medicinal uses with specific oncological targets, and third in [Fig-3(a) & 3(b)], we compiled a pharmacological inventory of drugs and bioactive compounds to distinguish general phytochemical trends from targeted cancer therapies.



Fig-1(a)

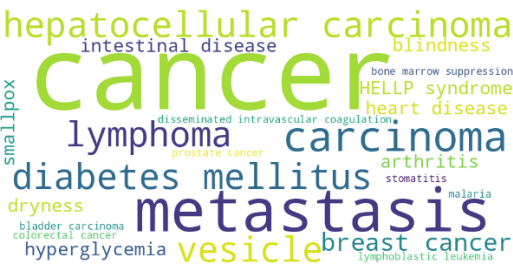


Fig-2(a)



Fig-3(a)



Fig-1(b)

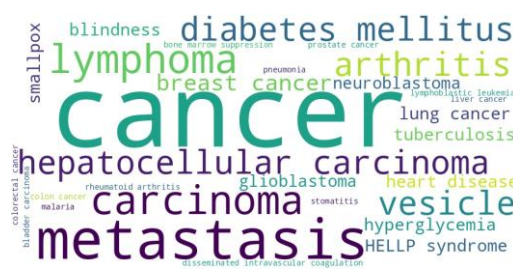


Fig-2(b)



Fig-3(b)

Conclusion

Semantic analysis confirms the foundational role of *C. roseus* in global oncology, highlighting its consistent importance in drug development and disease management. The study illustrates a clear evolution from traditional botanical research to sophisticated, targeted cancer therapies across international scientific communities.