Chapter 15
Conclusion and Future Perspectives

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In this book, several aspects of essential oils related to the treatment or prevention of cancer were discussed. This disease is currently one of the most severe health problems in the world, and still stands out as a main cause of death. Despite many efforts by the scientific community and real advances in the study of cancer, there are significant increases in new cases every year. Furthermore, the therapeutic arsenal used to restore patient's health is still quite limited and of only moderate efficiency with respect to toxicology and therapeutic aspects, especially in the treatment of solid tumors. The history of cancer research and development of new drugs has shown the importance of natural products for obtaining effective therapeutic agents. Natural anticancer substances such as taxol and vinblastine have complex chemical structures. Their chemical synthesis is a challenge for the pharmaceutical industry as well as academic researchers.

Essential oils are natural products widely found in the plant kingdom, especially in fruits such as orange, with high production in some countries, and which also yields an essential oil containing high percentages of limonene, a substance with antitumor properties. Limonene and other constituents of essential oils such as perillyl alcohol are structurally simple molecules. Easy isolation from nature or from chemical synthesis makes them interesting compounds with therapeutic potential in cancer, especially due to their low production costs.

The therapeutic use of essential oils in combination with conventional cancer treatments may well represent a new strategy for clinical therapy against certain tumor types. Because of volatility and high lipid solubility of essential oils, the inhalation route is a convenient way of administration with the purpose of clinical application. The analgesic, anti-inflammatory, and relaxing activities commonly reported for essential oils also make them potential adjuvants for clinical protocols of treatment and represent a new therapeutic option to improve patient's quality of life, reducing the physical and emotional disorders caused by cancer.

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