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Editorial

# Extraction Techniques of Plant Based Products

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## ABSTRACT

For thousands of years, natural remedies were the only choice for the prevention and treatment of human ailments. Drug development relies heavily on natural products. Natural remedies always have small levels of bioactive natural ingredients.

**Keywords:** Chemical engineering; Extraction: Traditional extraction procedures

## INTRODUCTION

Plants contain a vast pool of bioactive chemicals that has yet to be fully explored. Modern research is currently concentrating on identifying the beneficial components that can be employed in medicinal medications from these sources. The selection of extraction, separation, and structural identification techniques guides the hunt for new bioactive natural compounds. Natural remedies, such as TCM and Ayurveda, were founded and evolved over thousands of years in the daily lives of ancient people and in the process of their fight against diseases, and they have had a significant impact on the advancement of human civilization. Natural remedies' "active components" or "active principles" are chemicals that have been shown to have therapeutic properties. Natural goods have served as the foundation for the development of new drugs. In terms of functional groups, chirality, and structural complexity, natural products have more drug-like properties than compounds created by combinatorial chemistry. Natural medicines always have small levels of active substances. The extraction and isolation process, which is labor-intensive and time-consuming in the lab, has been a bottleneck in the use of natural products in medication development.

## EXTRACTION

The initial stage in separating the desired natural products from the raw ingredients is extraction. According to the extraction principle, extraction processes include solvent extraction, distillation, pressing, and sublimation. The most common method is solvent extraction. The stages of extraction of natural products include: The solvent penetrates into the solid matrix, the solute dissolves in the solvents, the solute is diffused out of the solid matrix and the extracted solutes are collected.

The extraction efficiency is influenced by the qualities of the extraction solvent, the particle size of the raw materials, the solvent-to-solid ration, the extraction temperature, and the extraction time.

When it comes to solvent extraction, the choice of solvent is critical. In general, the smaller the particle size, the better the extraction result. However, too tiny a particle size will result in increased solute absorption in the solid and problems in subsequent filtering. The higher the solvent-to-solid ratio, the higher the extraction yield; nevertheless, a high solvent-to-solid ratio will result in excessive extraction solvent and a long concentration time.

Traditional extraction procedures, such as maceration, percolation, and reflux extraction, often employ organic solvents and necessitate a significant volume of solvents and a lengthy extraction period. Some modern or environmentally friendly extraction methods, such as supercritical fluid extraction (SFC), pressurised liquid extraction (PLE), and microwave assisted extraction (MAE), have been used in natural product extraction

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and offer benefits such as lower organic solvent consumption, shorter extraction times, and higher selectivity.

## CONCLUSION

Natural product extraction and isolation, as well as their beneficial applications, are attracting a lot of attention. These applications are also conditioning the extraction methods used, as well as the innovative stationary and mobile phases that will be utilized by these techniques.

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