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EDITORIAL

Plants for human health: Almost gone but will not be forgotten

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Abstract
Using plants to develop therapy or treatment in humans seems to be a possible way to improve patient outcomes. The continuum of plant genetics changing into foods that will enhance health is an appropriate strategy. Horticultural Science, microbial biology, bioprocessing, and nutrition sciences require during the process. Therefore, healthcare professionals, including medical doctors, pharmacists, and nurses, need to discover the benefits and process them into usable objects. They are establishing coordinated efforts to evolve the resources to address health issues and ensure success with the institute initiatives program. Also, clarifying and delivering information to the public can be very useful to counteract the symptoms. In addition, a need for translation research and innovative technology will reach the objective of this issue.

Keywords: plants; human health; healthcare system; quality of life; quality care

People's perceptions of plant biotechnology and synthetic biology are shifting due to the idea of cultivating plants to improve human health and well-being as a whole, as opposed to producing plants just for the purpose of consuming them as food. A new generation of botanical treatments, which includes dietary supplements, functional foods, pharmaceuticals, and multi-component medicinal mixes, has been created due to the rediscovery of a relationship that had been lost for a very long time between plants and health. Botanical treatments have matured to their full potential due to developments in technology and methodology that have made identifying, validating, and producing high-value phytochemicals possible.

The health and happiness of humans rely heavily on plant life; in addition to the undeniable contribution, they make to one's diet, medicinal benefits derived from the consumption of certain foods date back centuries. Traditional medicines, such as plant extracts, tinctures, and powders, have been employed by various indigenous communities around the world, and this practice is still practiced today, with varied degrees of effectiveness, in the treatment, prevention, and cure of illness. Archaeological evidence reveals that humans used plants for therapeutic purposes throughout the Palaeolithic age; the first documented evidence dates back to the Sumerians. By the turn of the 21st century, the pharmaceutical industry had mainly switched from naturally occurring plant extracts to synthetic compounds created through chemical synthesis to cure and prevent disease. It is easy to decouple plants from health with the advent of medicine in the form of easy-to-drink "pills." As a result, it is simple to overlook the numerous modern drugs that still contain phytochemicals in their native form or as derivatives. This is because it is easy to consume medicine in the form of easy-to-consume "pills." Up to the 20th century, extracts of plants were routinely tested for the presence of novel pharmaceutically active chemicals. These compounds were subsequently isolated from their natural plant sources and processed. After that, the pharmaceutical industry shifted its focus to synthesising these natural products synthetically and using them as templates for generating structural analogs to obtain new chemical entities with the necessary efficacy. This was done to acquire new chemical entities to treat or prevent disease.

Competition from the disciplines of combinatorial chemistry has been a challenge to the richness and diversity of novel medications that can be discovered from plants. This competition has been a difficulty for several reasons. Arguably, several years of bioprospecting have led to identifying the natural compounds found in plants with the most significant potential for pharmaceutical use. These compounds are likely to be reasonably expected. However, numerous high-value plant-derived compounds with pharmacological activity have probably yet to be discovered. This may be the case either because they are produced in plants that are difficult to obtain or because of

a shortage of sophisticated research techniques. Finding novel plant molecules in today's world requires more complex discovery strategies because the chemical diversity of bioactive chemicals produced by the world's live plant species together contributes to a more extensive chemical diversity than any manufactured chemical library.

Today, not only is it possible to design traits in plants to improve human health, but it is also possible to produce high-value phytochemicals utilizing techniques from synthetic biology. Companies such as Evolva and Amyris take great satisfaction in using synthetic biology strategies for resolving the supply-chain issue of nature through the mass manufacture of natural plant chemicals in microbial organisms. These strategies were developed through the application of synthetic biology. There has been a recent spike in the number of biotech startup companies like Ginkgo Bioworks that are focused on modifying microorganisms to serve clients' needs in various areas. This corporation that specializes in the engineering of living creatures has, through its foundries, scaled and automated the process of producing a wide variety of compounds in microorganisms. These businesses concentrate their efforts primarily on metabolically engineering organisms to produce reasonable quantities of compounds that are in high demand and have uses in the fields of nutrition, health and personal care goods, flavors and perfumes, and cosmetic additives. Offer a step-by-step manual for the engineering of biorefineries based on unicellular chassis utilizing rational design principles, with the primary focus being placed on selecting the chassis as the primary factor in determining the success achieved by the engineering endeavor. It cannot be emphasized enough that the design and construction of unique biological systems to search for and generate new bio-actives, food additives, perfumes, nutritional supplements, and a wide variety of other high-value chemicals has been simplified and made possible thanks to synthetic biology.

Plants are on the verge of returning due to technical developments that have uncovered varied phytochemicals' one-of-a-kind qualities and applications, which can be used as medications or nutraceuticals to improve human health. In the next ten years, high-throughput sequencing technologies will generate data from various active multi-species plant research projects. Because of their low cost and ever-increasing sensitivity, these approaches have made it possible to sequence non-model, slow-growing, and difficult-to-culture plants. Indexing phytochemical signals unique to individual species will make future practical and sensible bioprospecting possible. Alongside the accurate cataloging of phytochemicals, it is essential to broaden engineering toolkits for plant biotechnology and synthetic biology to encompass molecular targets that are not as immediately apparent. For instance, the engineering of exporters in microorganisms would not only make it easier for the product to be exported out of the cell but also make it possible to avoid feedback inhibition and compound-associated toxicity. This, in turn, would enable higher yields and more cost-effective product purification further down the production line. Finally, the innovation in using plants for human health should be further developed to enhance the intervention, patients’ quality of life and the healthcare system in clinical settings.