new drugs are discovered and developed. This will only be successfully accomplished if the procedures for drug target elucidation and lead compound identification and optimization are themselves optimized. Analysis of the human genome will provide access to a myriad number of potential targets that will need to be evaluated [60, 65]. The process of high-throughput screening enables the testing of increased numbers of targets and samples to the extent that approximately 100,000 assay points per day are able to be generated. However, the ability to accelerate the identification of pertinent lead compounds will only be achieved with the implementation of new ideas to generate varieties of structurally diverse test samples [60, 65, 66]. Experience has persistently and repeatedly demonstrated that nature has evolved over thousands of years a diverse chemical library of compounds that are not accessible by commonly recognized and frequently used synthetic approaches. Natural products have revealed the ways to new therapeutic approaches, contributed to the understanding of numerous biochemical pathways and have established their worth as valuable tools in biological chemistry and molecular and cellular biology. Just a few examples of some natural products that are currently being evaluated as potential drugs are (natural product, source, target, indication, status): manoalide, marine sponge, phospholipage-A_2 Ca^{2+}-release, anti-inflammatory, clincial trials; dolastatin 10, sea hare, microtubules, antineoplastic, nonclinical; staurosporine, streptomyces, protein kinase C, antineoplastic, clinical trials; epothilone, myxobacterium, microtubules, antineoplastic, research; calanolide A, B, tree, DNA polymerase action on reverse transcriptase, acquired immunodeficiency syndrome (AIDS), clinical trials; huperzine A, moss, cholinesterase, alzheimer's disease, clinical trials [60].

The costs of drug discovery and drug development continue to increase at astronomical rates, yet despite these expenditures, there is a decrease in the number of new medicines introduced into the world market. Despite the successes that have been achieved over the years with natural products, the interest in natural products as a platform for drug discovery has waxed and waned in popularity with various pharmaceutical companies. Natural products today are most likely going to continue to exist and grow to become even more valuable as sources of new drug leads. This is because the degree of chemical diversity found in natural products is broader than that from any other source, and the degree of novelty of molecular structure found in natural products is greater than that determined from any other source [31, 65, 142].

Where are these opportunities? Well, research into the use of plant-derived natural products alone in just the field of medicine covers a broad spectrum of activities [35, 67, 166, 168, 169]. Examples of such biological activity profiles would include, but are not limited to, nootropics, psychoactive agents, dependence attenuators, anticonvulsants, sedatives, analgesics, anti-inflammatory agents, antipyretics, neurotransmission modulators, autonomic activity modulators, autacoid activity modulators, anticoagulants, hyoplipidemics, antihypertensive agents, cardioprotectants, positive ionotropes, antitussives,