

Chemical and Biological Studies on Dietary Plants

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Dietary plants historically have made remarkable contributions to pharmacotherapy. Dietary plants-based formulations against prevailing and emerging diseases have gained a major scientific interest in post-COVID-19 era. Nevertheless, isolating bioactive constituents and their subsequent development are not without the challenges. Our work in the past two decades has been widely focused on the discovery of new drug leads from medicinal and dietary plants, as well as synthesis of their bioactive analogs by biocatalytic transformations. We have been working largely at the interface of chemistry and biology for the discovery of chemical constituents from dietary plants used in traditional medicines. This has resulted in the identification of several novel drug leads against various therapeutic targets. Emphasis has been on the discovery of novel drug like molecules and dietary plants-based formulations against neglected and prevalent diseases, such as leishmaniasis, dengue infection, cardiovascular, inflammatory, diabetes, and Alzheimer's and Parkinson's diseases. Some aspects of their development for clinical use will be discussed. During this presentation, the underlying philosophy and approach of our research on cost-effective and sustainable discovery of natural-based drug leads and plant formulations against infectious and prevalent diseases will also be discussed.

Keywords: Drug discovery; Alzheimer diseases; dietary plants.