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Editorial

DRUGS FROM NATURE: PLANTS AS AN IMPORTANT SOURCE OF PHARMACEUTICALLY IMPORTANT METABOLITES

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Natural products are a constant source of potentially active compounds for the treatment of various disorders. There are several hundreds of drugs being designed and developed based on plant secondary metabolites all over the world. It should also be highlighted that plants (or their parts) are used as infusions, tincture, or in the form of crude extracts for treatment of various human disorders (St. John wort utilized in the treatment of mild to moderate depressions; Devil's claw against inflammations, etc). The World Health Organization estimates that 4 billion people (i.e. 80% of the World's population) use herbal medicines in some aspects of primary healthcare and there is a growing tendency to "Go Natural", which altogether comprise an annual market of several billion US dollars. This has opened up a huge and potential window for research and challenges a number of scientists in exploring the (still) hidden part of nature in searching for new drug leads from plants. It is to be noted that currently an about half of the plant species have been described as only 10% of them have been scientifically investigated. Current research in drug discovery from medicinal plants involves a multifaceted approach combining botanical, phytochemical, biological, and molecular techniques. The early drugs discovered from medicinal plants such as such as morphine, cocaine, codeine, digitoxin, and quinine, are still in use. It is to be noted that of all available anticancer drugs, 40% are natural products per se and/or natural product-derived with another 8% considered being natural product mimics. Several natural product drugs of plant origin have either recently been introduced into the market or are currently involved in late-phase clinical trials.

The purpose of this special issue is to discuss the current advancements in the development of drug leads from plants for prevention of socio-significant diseases like snakebite, diabetes, cancer, inflammation, cardiovascular diseases, etc., proven to be very important by several (epidemiological) studies, their medicinal chemistry, and mechanism of action. Further, it highlights the therapeutical potential of various plants and/or their metabolites in treatment of various disorders. It also focuses to cover some modern and emerging techniques for finding therapeutic leads to combat disorders.

I expect this special issue containing of 45 manuscripts to be of great interest for researchers from the medical and technological fields, opening new directions for the design and development of therapeutic drug leads to combat various diseases.