

### **Harnessing the Significance of Natural Products for Diseases and Beyond**

Globally, the use of natural products for the management of diseases, as food supplements and nutraceuticals is as old as mankind. The significance of natural products for medicine and health has been extensively explored over the ages. Our forefathers greatly relied on natural products for their basic healthcare needs, as the sole means in the treatment and prevention of infections. The World Health Organization supports the use of natural products provided they are proven to be efficacious and safe. The renewed interest in natural product research is due to among other things to aid in the discovery of novel and new metabolites as remedies against cancer, diabetes, cardiovascular disorders, tropical diseases and infections, presently ravaging mankind. Other possible reasons include the emergence of more virulent diseases and the development of resistance to existing drugs, reduced side and adverse effects of drugs. The availability and affordability of natural products seem to be one of the major reasons for its widespread use and applications.

Natural product research is a specialty in biological and chemical sciences which requires state-of-the-art and conventional techniques in the discovery and development of new drugs, pesticides, and other chemicals for safe utility. A combined effort of pharmacologist, microbiologist, pharmaceutical chemists, biologist, clinicians, plant and animal scientists, natural product chemists etc. is required to achieve meaningful and comprehensive research in natural products.

With the advancement in science, some basic techniques and tools are employed to enhance Natural Products Research. This includes yield optimization via total synthesis of natural products, combinatorial chemistry to screen and develop potent lead molecules from large pool of library, metabolomics studies, phylogenetic survey, chemotaxonomy, nuclear magnetic resonance (NMR) and activity-guided isolation techniques, formulation studies using Fourier transform Infra-Red spectrophotometer FTIR, LC-MS, MS-MS and high-throughput

screening (HTS). The latter involves the process of testing a large number of diverse chemical structures against disease targets to identify 'hits'.

Globalization and burgeoning world's economy are catalysts to the development of new and more potent pharmaceuticals. This in turn engenders global competitiveness in the discovery and development of new pharmaceuticals by the big "Pharma companies". Hence, natural products research has been revisited to increase the effectiveness of drug discovery and development.

Interestingly, natural products have pointed the way to the future. A number of interesting and recent advances in science and industry have been inspired by the quest to maximize the value of natural products. The role of combinatorial chemistry in drug discovery and the future impact of genomics, proteomics and metabolomics in natural product research is attracting attention by scientists. Combinatorial library technique, which is an emerging technique, is growing in proficiency with support from pharmaceutical companies and research institutes. But even with this technology, there cannot be a substitution for the biodiversity that can be found within the boundaries of the tropical rainforests. The potential relevance of natural products for diseases and beyond has not been fully explored and exploited.

In the context, the Tropical Journal of Natural Product Research (TJNPR)- an official publication of the Natural Product Research Group, Faculty of Pharmacy, University of Benin, Nigeria, is designed to capture recent advances in natural product research from different regions especially the tropical rainforest which harbours over 70% of natural products. It is an international open access journal aimed at making important contributions to the field of natural product research, pharmaceutical, biological, chemical and natural sciences. The journal covers all aspects of pharmaceutical research, chemistry, biochemistry of naturally occurring compounds, biological evaluation of crude extracts, ethnomedicine, ethnopharmacology, biomedical research, biomedicine, biotechnology and formulation studies involving natural products and conventional drugs, isolation and characterization of metabolites, structure elucidation, synthesis and experimental biosynthesis of natural products, therapeutic strategies that can lead to or assist in the prevention and

management of chronic and infectious disease and clinical therapeutics. Research papers in fields on the chemistry-biology boundary, e.g. fermentation chemistry, plant tissue culture investigations etc., are also accepted. Papers discussing the screening of natural products for biological activity against different health targets and the effects of natural products on gene expression in animals are also encouraged.

The Editorial Board of the Tropical Journal of Natural Product Research is pleased to release its maiden edition to the international scientific community. The Editorial Board strongly encourages rapid and prompt review process and publication. To distinguished members of the Editorial Board, thank you for the excellent support.

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