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New bioactive molecules from Indian medicinal plants for pharmaceutical and insecticidal applications

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Concurrent with human civilization, plants have been their true companions as source of medicine. These plants have contributed significantly in discovery, design and development of several modern medicines. Recent move of society towards nature for the treatment of various diseases where there is no satisfactory cure in modern medicine has diverted the attention of natural/medicinal chemists and biologists to unravel their chemical characteristics and biological activities together in order to define their therapeutic potential in the light of modern pathobiological understandings. This move has led collectively to rediscover, design and refine the therapeutic application of medicinal plants.

During last five years, we have studied several medicinal plants guided by *in vitro* based bioassays to delineate the chemistry of medicinal plants responsible for biological activities. This effort has led to identify several potent multiple active medicinal plants, their active fractions and synergistic molecular compositions. We have identified particularly, several free radical scavengers, cytotoxic and α-glucosidase inhibitory principles present in substantial yield in Indian Medicinal Plants. Presence of multiple active phytochemicals in rich concentrations in some of the medicinal plants therefore offers exciting opportunity for development of novel therapeutics and also provides scientific justification for their use in traditional medicines. In addition, some of the compounds isolated from these plants also displayed potent insecticidal activities.

Biography

Katragdda Suresh Babu was born on 17th May, 1976 in Guntur District of Andhra Pradesh, India. He obtained his Masters in 1999 and Doctorate in Natural Product Chemistry in 2005 from Kakatiya University, Warangal. Later on, he moved to pursue his postdoctoral research at National Center for Natural Product Research, University of Mississippi, USA for three years. He returned to India and joined in CSIR service in 2007 at Indian Institute of Chemical Technology (IICT), Hyderabad. In his research career, Dr. K. S. Babu has been able to successfully carry out extensive basic and applied research investigations in the chemistry of Natural Products of biological relevance. He is a specialist in new drug discovery from natural products, structure-activity relationship studies and standardization of herbal drugs of commercial importance. Dr. Babu's research group has successfully isolated several new bioactive molecules from natural resources and He has published more than 80 papers in SCI journals and filed more than 10 patents of India, PCT & US. He is leading many projects of national importance in New Drug Discovery, Standardization of Herbal Drugs. His research interests are New Drug Discovery from Natural Products, Herbal Drugs and their standardization, botanical pesticides, chemical modification of lead compounds, SAR studies and asymmetric synthesis. His expertise and skills in natural product chemistry & new drug discovery are outstanding and his group is now well recognized for new bioactive molecules for drug applications in the area of natural product chemistry. Dr. Babu is a recognized research guide for doctoral and postdoctoral programs and seven scholars are working under his able guidance.