

Medicinal Plants Need Biological Screening: A Future Treasure as Therapeutic Agents

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Over the centuries, medicinal plants have been utilized in various cultures of the world as a natural healing tool. Plants as a source of medication in the form of traditional and folklore based on the rich experiences of innumerable healers over centuries, inherited from ancestors, healer-to-healer transfer or developed through personal experiences over time [1-3]. Modernity or cultural revolutions has not altered the in-depth wisdom of this natural medical paradigm. Consequently, no modern system of medicine can ordinarily lay claim to it. The traditional system of treatment, differing in concept and protocol, exemplify well-developed systems such as Allopathic, Homeopathic, Ayurvedic, Chinese system of treatment [4-8]. Most of the civilized nations have developed their own *Materia Medica*, compiling details about various plants used for therapeutic purposes. The merging of this human pharmacopoeia of natural origin with the incredible development in the various fields of modern medical sciences indeed provides the foundation for a much needed revolution in the existing healthcare system.

Botanical survey estimated the identification of 250,000 to 350,000 plant species over the planet. However, approximately 35,000 species have been used in different communities of world for the treatment of various ailments [9-11]. These plants are mostly exercised in unrefined or semi-processed form, often in mixtures; therefore require quality control testing and rigorous clinical trials for scientific rationale [12,13]. Researchers believed that approximately 15% of medicinal plants have been subjected to photochemical analysis and 6% to biological screening [14-16]. The rest of plants remained untouched; therefore, this therapeutic modality has tremendous scope in the discovery of new effective therapeutic agents.

Medicinal plants have played an amazing role in the development of new clinically effective drugs. Though remarkable development has been made in the fields of chemistry such as synthetic, combinatorial, and biotechnological sciences, medicinal plants can still be exploited as an initial point for the synthesis of new compounds with different structural parameters. In the presence of these sophisticated technologies, the plant-derived drugs become more streamlined. The proper utilization of these techniques has already lead to the discovery of some interesting clinically useful molecules [17,18]. Importantly, 15 compounds of natural origin have been launched during 2000-2003 while the same number of compounds are in the phase III clinical trials or registration stage of drug development [19]. It has been recently estimated that the natural product offer 100 times higher hit rate when compared with synthetic drugs [20].

Perfect coordination of numerous fields is crucial in the discovery of phytomedicine. The identification and collection of plant material from specific locality is the job of ethnobotanist [21]. Phytochemist urges to design rapid but efficient method of extraction from plant source. Keeping in view the fork uses, the ethnopharmacologist proposes and screens out the extract in some relevant assay. Based on the fallout of test, the phytochemist subjects the extract to the isolation of pure chemical entities that could be responsible for the activity [22,23]. Afterward, different clinical trials are carried for the particular molecule. It is bitter truth that only one molecule out of 5000

successfully completes all stages of development and obtain registration for clinical applications [17]. However, this outstanding treasure needs comprehensive attention in terms of biological and pharmacological screening to serve humanity against various disorders.

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Received February 03, 2014; Accepted February 03, 2014; Published February 10, 2014

Citation: Khan H (2014) Medicinal Plants Need Biological Screening: A Future Treasure as Therapeutic Agents. *Biol Med* 6: e110. doi: 10.4172/0974-8369.1000e110

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