

# Limiting the Development of Phytomedicine, Such as Lack of Standardization

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## Description

Chronic joint inflammatory disorders such as osteoarthritis and rheumatoid arthritis have in common an upsurge of inflammation, and oxidative stress, resulting in progressive histological alterations and disabling symptoms. Currently used conventional medication (ranging from pain-killers to biological agents) is potent, but frequently associated with serious, even life-threatening side effects. Used for millennia in traditional herbalism, medicinal plants are a promising alternative, with lower rate of adverse events and efficiency frequently comparable with that of conventional drugs. Nevertheless, their mechanism of action is in many cases elusive and/or uncertain. Even though many of them have been proven effective in studies done *in vitro* or on animal models, there is a scarcity of human clinical evidence.

Medicinal plants have played a key role in the world health care with about 80% of Africans depending on phytomedicine, which has shown a wide range of users in the treatment of diseases especially priority diseases of Africa such as HIV/AIDS, malaria, sickle-cell anemia, diabetes and hypertension. These medicinal plants have more beneficial effect than their synthetic counterparts through being safer, acceptable, affordable, culturally compatible and suitable for chronic treatments. Some African phytomedicines are well known in the international market and so supply economic benefit for the producing countries. The use of phytomedicine should be integrated into the health agenda since effective health care cannot be achieved in Africa by using orthodox medicine alone. This can be achieved by adopting the WHO memorandum and guidelines for the institutionalization of phytomedicine into the health sector. Although there are some problems limiting the development of phytomedicine, such as lack of standardization, efficacy and quality control of plants used, extinction of some plant species, lack of funds and others, if these problems can be fully addressed, this will help in the future development and harmonization of phytomedicines.

Skin integrity is restored by a physiological process aimed at repairing the damaged tissues. The healing process proceeds in four phases: Hemostasis, inflammation, proliferation and remodeling. Phytomedicine presents remedies, which possess significant pharmacological effects. It is popular amongst the general population in regions all over the world. Phytotherapeutic agents have been largely used for cutaneous

wound healing. These include Aloe vera, mimosa, grape vine, echinacea, chamomile, ginseng, green tea, jojoba, tea tree oil, rosemary, lemon, soybean, comfrey, papaya, oat, garlic, ginkgo, olive oil and ocimum. Phytotherapy may open new avenues for therapeutic intervention on cutaneous wounds. This article provides a review of the common beneficial medicinal plants in the management of skin wounds with an attempt to explain their mechanisms. Metabolomics is an emerging and rapidly evolving science and technology system of comprehensive experimental analysis of metabolite profiles, either as a targeted subset of related chemicals or more globally, for diverse applications in diagnosis, toxicology, disease development and animal disease models, genetic modification of specific organisms, drug discovery and development, and phytomedicines.

The definition of genomics is not precise. The term was coined by Tom Roderick and originally meant analysis of the whole genome. Now it commonly refers to large-scale, high-throughput molecular analysis of multiple genes, gene products or regions of genes. Transcriptomics, often included in the term genomics, depicts the expression level of genes. For both, the new tools are the microarrays. The ever increasing epidemiological burden of severe life-threatening diseases on human population across the globe has compelled the researchers and clinicians to develop stringent therapeutic strategies against them. The current spate of increased incidence of fatal neurodegenerative disorders too demands effective therapeutic interventions. However, the existing conventional therapies against them are marred by adverse side effects associated with their administration. Their exorbitant prices are another factor that restricts their use. To overcome these shortcomings of synthetic drugs, the age old practice of traditional herbal medicines has gained popularity as the most sought after alternative to conventional drugs. Nature is the most effective source of naturally occurring herbs that are a reservoir of pharmacologically active phytochemicals and phytomedicine. Their easy accessibility, affordability, and most of all their safety and efficacy have immensely contributed toward their success against some of the most severe forms of neurological diseases and reliability among the consumers. Clinically obtained data and laboratory studies strongly point toward their therapeutic efficacy against stroke, Alzheimer's disease, Parkinson's disease, Huntington's disease, etc. Their antioxidant and anti-inflammatory potential is supposed to be responsible for their neuroprotective effects, although their

exact action mechanism still needs to be deciphered completely. The present chapter focuses on the impact of various phytochemicals and herbal drugs over the now common fatal

neurodegenerative disorders and why they are being employed as the primary health-care option by the clinicians and the suffering population.