

## The role of plant natural products in diabetes drug discovery and development: A report with focus on Nigerian biodiversity

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**Background:** Plant natural products have a proven global history of treating diseases and ailments. These medicinal plants have been used since ancient times in various parts of the world where access to modern medicine is limited. Medicinal plants play important role in the management of diabetes mellitus especially in developing countries where resources are limited. Diabetes mellitus (DM) is a metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. Insulin deficiency leads to chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism. Diabetes mellitus affects most of the people in both developed and developing countries. The treatment of diabetes with conventional drugs is very expensive and chances of side effects are high.

**Objective:** The specific objective of this article is to provide a comprehensive report on on-going global efforts to discover and develop more efficacious anti-diabetic drugs with no side effect from various medicinal plants found within Nigerian's rich flora, which have been shown to display potent anti-hyperglycaemic activity.

**Methods:** Different researchers in different fields (chemistry, biochemistry and molecular biology) have employed technological developments in separation methods, hyphenated technique and high throughput assays to drive the drug discovery processes.

**Conclusion:** Natural products identified from medicinal plants give an exciting opportunity for the development of new therapeutic agents for the treatment of diabetes mellitus. Most prevalent among natural products are flavonoids, terpenoids, cardiac glycoside, alkaloids and steroids. Despite considerable progress in the development of synthetic drugs, the discovery of phytomedicine as an alternative therapy is progressing. This paper discusses the role of plant natural products in diabetes management.

**Key words:** *Medicinal plants, Natural products, Diabetes mellitus, Antioxidant activity, Anti-hyperglycaemic activity Drug discovery and development*