

## Inhibition of glycosylation as an index of activity in plants with antidiabetic potentials

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The non-enzymatic glycosylation of haemoglobin has been established and shown to be significantly increased in diabetes. Advanced glycosylation end-products (AGEs) promote the development and progression of diabetic complications. Twenty plants were selected from Lagos metropolis in Nigeria for the study. The inhibitory properties of the ethanolic extracts of each plant on glycosylation of haemoglobin as an index of antidiabetic property were investigated using quercetin as Standard. The ethanolic (96%) extracts of the plants were phytochemically analyzed for the presence of phenolic compounds and the total phenolic content of the plants was measured by Folin-Ciocalteu's reagent using gallic acid as a standard. *Lophira alata* was found to contain the highest amount of phenols with a concentration of 0.515 mg/ml and *Citrullus lanatus* had the lowest concentration of 0.007 mg/ml. Five plants showed a higher percentage inhibition of glycosylation than quercetin which showed a percentage inhibition of 10.155%. They are *Alstonia congensis*, *Vernonia amygdalina*, *Alstonia boonei*, *Sarcocephalus latifolius*, *Azadirachta indica* and *Gongronema latifolium* with percentage inhibition of 24.799%, 20.310%, 16.429%, 14.036%, 13.441% and 11.953% respectively. From the study, fifteen out of the twenty plants analyzed inhibited the binding of glucose to haemoglobin and thus may be used as adjuncts in antidiabetic therapy.

## Herbal drugs and formulations

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Herbal formulations means a dosage form consisting of one or more herbs or processed herbs in specified quantities to provide specific nutritional, cosmetic benefits meant for use to diagnose, treat, mitigate diseases of human beings or animals, alter the structure or physiology of human beings or animals. Herbal formulations contain an active substance or herbal substance or herbal preparation or herbal substance in combination with one or more herbal preparations. Herbal formulations are obtained by subjecting herbal substances to treatments such as extraction, distillation, expression, fractionation, purification, concentration or fermentation include comminuted or powdered. Whole, fragmented or cut plants, plants parts, algae, fungi, lichen in an unprocessed, usually dried form but sometimes fresh were used in the preparations of herbal formulations. Herbal substances are precisely defined by the plant part used and the botanical name according to the binomial system (genus, species, variety and author). Different herbal formulations are tinctures, extracts, essential oils, expressed juices and processed exudates. Markers are chemically defined constituents or groups of constituents of a herbal substance, a herbal preparation or a herbal medicinal product which are of interest for control purpose independent of whether they possess any therapeutic activity. Markers serve to calculate the quantity of herbal substance or herbal preparation in the herbal formulations if the markers have been quantitatively determined in the herbal substance or herbal preparations. Characterization of herbal formulations which includes are design and development, pharmacopoeial tests and acceptance criteria, periodic testing, release, shelf-life acceptance criteria, in-process tests, alternative procedures, evolving technologies, reference standard and statistical concepts.

## Biography

Prabhakar Reddy Veerareddy is an accomplished researcher, eminent teacher in Pharmaceutical Sciences. Currently, he is serving as principal at Chaitanya College of Pharmacy Education and Research, Hanamkonda, Andhra Pradesh. He has spent one year at Butler University, Indiana Polis, USA for post doctoral research and pursued his doctoral thesis (Pharmaceutics) at Novel Drug Delivery Laboratories in Kakatiya University, India during 2005. He has attended many symposiums and workshops at the national and international level. He has more than 50 research publications in several international journals, and he guided 35 M. Pharm students and 4 Ph.D. students.