

With a new approach commercially useful antimicrobial products can be delivered from plants

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Plants have yielded many pharmaceutical products with different therapeutic applications. Although there have been thousands of publications, no useful antibiotic product has been developed from plants, the following factors may explain the situation: wrong extractant used, wrong bioassay used, very low activity of isolated antimicrobial compounds and investigating only plants used traditionally. The antibacterial activity of acetone leaf extracts of more than 700 South African tree species on important nosocomial bacterial pathogens *Staphylococcus aureus*, *Enterococcus faecalis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Mycobacterium smegmatis* and two fungi *Candida albicans* and *Cryptococcus neoformans* were determined. From more than 700 tree species, 135 leaf extracts had a minimum inhibitory concentration (MIC) of 0.04 mg/ml or lower against these important pathogens. Many extracts were cytotoxic to mammalian cells. Many of these species have a good potential to be used as crude extracts to treat topical infections in humans. Two patented examples will be discussed where these extracts have been as effective as commercial products in controlling microbial infections in animals and plants. The problems in commercializing plant extracts as antimicrobials e.g. quality control, availability of material and variability will also be discussed. It appears that if the focus is on using extracts rather than isolated pure compounds, there is a considerable opportunity to use the compounds present in plants to combat microbial infections if the best extractant and methods are used.

Biography

Jacobus Nicolaas (Kobus) Eloff was Professor University of Free State, Cape Town, Pretoria, executive director, National Botanic Gardens, and research director, National Botanical Institute. Now, he is leader of interdisciplinary phytomedicine programme and guided 46 M.Sc. and 31 Ph.D. students. He is editor of several scientific journals, and 10 books. He has more than 200 scientific publications with more than 4200 citations, H-factor: 31, 175 presentations international scientific meetings, >50 invited, plenary or keynote lectures. He received several national and international awards including NSTF Eskom award for capacity development, Bronze medal from International Society Horticulture, Silver and Gold medal, Botany, Gold medal, SA Akademie Wetenskap en Kuns, Gold medal, SA Academy for Science.

Evaluating insulin, leptin, and adiponectin levels in high fructose- fed rats treated with some antioxidants

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The metabolic syndrome (Met) is a constellation of risk factors. The objective of this study is to compare the ameliorating effect of metformin, carnitin, lipoic acid, lipitor and orlistate on insulin, lipid profile, leptin, adiponectin levels in high fructose fed rats (HF). Seventy rats were divided into, G1: normal control, G2: G7 rats fed HF for 8 weeks. But after the fourth week, G3, G4, G5, G6 and G7 were orally administered metformin, lipitor, orlistate, lipoic acid, and or carnitin. All drugs were administered once daily. After 8 weeks of feeding, a significant increase in blood glucose level was observed in HF fed rats compared to normal, but this increase was significantly decreased after administration of metformin and lipitor. The rise of serum insulin in HF fed rats was significantly decreased after administration of lipoic, carnitin, and metformin. Significant higher concentrations of triglycerides (TG), total cholesterol & low density lipoprotein cholesterol (LDL-C) were observed in HF rats and these were lowered after the administration of drugs in question. There was a significant decrease in serum high density lipoprotein cholesterol (HDL-C) in HF group, the administration of all drugs alleviates this reduction. The increased of serum leptin level in HF group was decreased significantly in metformin and orlistate groups whereas the reduction of serum adiponectin level was increased in lipitor, carnitin, and orlistate groups. This suggested the beneficial effect of metformin, lipitor, orlistate, lipoic acid and carnitin in reducing risk for people with decreased insulin sensitivity as well as hyperlipidemic subjects.

Biography

Laila M. Fadda has completed his Ph.D. at the age of 35 years from Cairo University and postdoctoral studies from Minia University School of Medicine (Egypt). He was dean of faculty of pharmacy. Now, he is working as a Professor in King Saud University- Pharmacy college, Pharmacology Department, Riyadh, Saudi Arabia. He had sixty papers, some of them were published in ISI journals.