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## Enhancing the regulatory approval of herbal medicine: The place of toxicogenomics

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Medicinal plants constitute a source of raw materials for both traditional and modern medicine. Globally, traditional medicine has been accepted as one of the ways that individuals seek remedies for all kinds of medical problems ranging from simple headache to severe and terminal disease such as cancer. The wide usage of herbal medicine has contributed greatly to the growth of the global pharmaceutical market. The use of herbal medicine has been driven by poor medical facilities across Africa, high cost of orthodox medicine, inadequate medical facilities and ease of accessibility, affordability and availability. Though the claims of most traditional herbal practitioners may be unquestionable, the world and users of the product have to be convinced of their efficacy, efficiency and safety using modern toxicological techniques and clinical research. In most biomedical research evaluating medicinal products in Africa and possibly elsewhere in the world, acute toxicological testing using animal models have prevailed. Recent findings have shown that data generated from animal studies may not directly be extrapolated in human subjects. Developing herbal medicines thus requires research technique which is able to predict toxicities as early as possible. Could regulatory agencies adopt toxicogenomics screening as a faster and cost saving technique when approving herbal products in this region? Are there advantages to be derived when this technique is used? How will practitioners benefit from this emerging technique? The aim of this presentation is to discuss the above issues hoping that the knowledge if applied in the broader diagnostic scope shall help greatly in the regulatory process of herbal products.

## Biography

Augustine A. Onyeaghala is a biomedical scientist, clinical research scientist, quality assurance expert, GCP, GMP and GLP specialist. He holds a master's degree in Chemical Pathology, post graduate diploma in Clinical Research from Kriger Research International, Canada. He is presently a doctorate student in Clinical and Translational Research with research interest in predictive toxicology /toxicogenomics. He has mentored a great number of students to become biomedical scientists and clinical research professionals. He has authored more than fifty scientific abstracts and presented over fourty in both local and international conferences. He is a regular speaker and presenter at international and local conferences and meetings discussing clinical research, quality assurance, biomedical science and good clinical practice regulations. He is currently an assistant director (Training) in Biomedical Science at the University College Hospital, Ibadan, a freelance consultant in Clinical Research and the president of the Society of Quality Assurance, Nigeria Regional Chapter. He has published a reasonable number of research papers in both local and international journals and is also an author of a book in total quality management.

## Acute toxicity and antidiarrheal evaluation of acetone extracts of *Acacia sieberiana* var woodii (Fabaceae) stem bark in Wistar rats

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Diarrhea is responsible for about 5 million deaths annually, of which 2.5 millions are malnourished children of less than 5 years especially in developing countries. Despite the use of synthetic antidiarrhoeal drugs known to have side-effects and many efforts made by many governmental and other international organizations in trying to control this disease, the rate of incidence of the disease is still high, about 7 million per year. This study aimed at evaluating the phytochemical screening and the antidiarrheal activity of the acetone extract of *Acacia sieberiana* stem bark. Phytochemical screening was carried out to identify the active constituents present in the acetone extract, and the acute toxicity. The effect of this extract was done on the gastro intestinal motility and the castor oil-induced diarrhea was evaluated in rats. The results of the pytochemical screening revealed the presence of saponin, tannins, cardiac glycosides, steroidal ring, resins and carbohydrates. No deaths and no signs of abnormal behavior were observed in the Wistar rats treated with the acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* stem bark up to 2000 mg/kg bodyweight. The acetone extract of *Acacia sieberiana* the number of the stem bark extract (300, 600 or 1200 mg/kg) also exhibited a significant inhibition of castor oil-induced diarrhea in a dose-dependent manner with the highest inhibition (p<0.001) at 84% with the 1200 mg/kg. The results of this investigation show that the acetone extract contains phytochemical substances with antidiarrheal properties. This provides the rationale for the use of the stem bark extract of *Acacia*