

## DRUG DELIVERY, NANOMEDICINE AND NATURAL PRODUCTS (DN)2 P RESEARCH GROUP

### **Background of Research Group**

The main research interests of our group are firmly based around formulation of novel pharmaceutical preparations with particular emphasis on drug substances from local sources. It is active in developing novel formulations for possible commercialization. It collaborates strongly with industry, regulatory agencies and other research groups involved in drug development and regulations. We aim to utilize cutting edge technology incorporating our indigenous plants to formulate targeted dosage forms for treatment of common diseases like malaria and bacterial infections.

### **Research Areas**

- Development of polymer-based hydrogel nanoparticles for targeted wound healing
- Development of novel antimicrobial creams for wound care
- In vitro equivalence studies / comparative assessment of medications in Sub Saharan markets.
- Evaluation of the effect of indigenous herbal products on the bio-availability of antiretroviral drugs.
- Drug formulations Studies evaluating the use of indigenous oils as permeation enhancers for topical drug products.
- Development of pharmaceutical grade excipients from agricultural wastes and other untapped materials

### **Description of Notable Research findings /Outstanding Research findings**

Analysis of metronidazole in equine plasma using liquid chromatography/tandem mass spectrometry and high-resolution accurate mass spectrometry

The effect of con-comittant use of Polyherbal formulations 'bitters' on the bioavailability of Protease inhibitors, Lopinavir and Atazanavir in vitro and in a Wistar® rat model (On going work)

The effect of con-comittant use of infusion of Moringa oliefera on the bioavailability of Protease inhibitors, Lopinavir and Atazanavir in vitro and in a Wistar® rat model (On going work)

### **Team members and their speciality**

<b>Name</b>	<b>Role</b>	<b>Speciality</b>	<b>Department</b>
<b>DR CP AZUBUIKE</b>	PRINCIPAL RESEARCHER	DRUG DELIVERY AND EXCIPEINTS OBTAINED FROM NATURAL PRODUCTS /	Pharmaceutics and Pharmaceutical Technology
<b>DR M ILOMUANYA</b>	RESEARCH PARTNER	DRUG DELIV ADSORPTION	Pharmaceutics and Pharmaceutical Technology
<b>DR M OKUBANJO</b>	RESEARCH PARTNER	DRUG DELIVERY	Pharmaceutics and Pharmaceutical

### Pictures of Team members (Smiling Please!)



CVs

### Selected Publications

1. Antibacterial and Wound Healing Properties of Methanolic Extract of dried fresh *Gossypium barbadense* Leaves (2012) *Asian Journal of Biomedical & Pharmaceutical Sciences* 2(13), 32-37
2. Formulation of an antimicrobial cream from *Lansea Welwitschii* for wound healing 2016 (In press)
3. Lomustine Nanoparticles Enable Both Bone Marrow Sparing and High Brain Drug Levels - A Strategy for Brain Cancer Treatments 2016 (In press)
4. In vitro dissolution kinetics of metronidazole from micro particles prepared via external gelation technique. Abstract presented at FIP conference Australia 2013
5. Evaluation of the prevalence of herbal drug use with concomitant administration of highly active antiretroviral therapy and its effect on adherence in a hospital setting in western Nigeria (On going work)