

**DEPARTMENT OF BIOCHEMISTRY  
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**PhD Proposal Seminar on  
Anticonvulsant and Antiepileptic Potentials of  
*Caesalpinia bonduc*, *Newbouldia leavis* and  
*Nicotinia tobacum* leaf on animal models of  
Epilepsies (Rat and Mice)**

**by**

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# OUTLINE

- Introduction
- Justification
- Aim and objectives
- Specific objectives
- Methodology
- Expected outcome
- references
- Timeline and estimated budget

# Introduction

- Since ancient times, epileptic attacks were thought to be the result of invasion and possession of the body by supernatural forces, usually malign or evil influences, requiring exorcism, incantation or other religious or social approach.
- However, the discovery of Antiepileptic Drugs (AEDs) has brought epilepsy to the province of science. Science has debunked the myths surrounding epilepsy by offering explanation for its characteristic features

# Introduction

- Epilepsy is a common neurological disorder that demands immediate medical attention and, often, long-term therapy (Mathur *et al.*, 2010).
- A seizure is an abnormal electrical discharge in the brain that causes alteration in consciousness, sensation, and behavior.
- When the risk of spontaneous seizures is sufficiently high, generally after two spontaneous seizures, the patient is diagnosed with epilepsy

# What is epilepsy?

- The Yoruba call it WARAPA, it is FARFADIYA in Hausa, AKWU-KWU in Igbo and the Benin call it OWA.
- Seizure: The clinical manifestation of an abnormal and excessive excitation and synchronization of a population of cortical neurons
- Epilepsy: A tendency towards recurrent seizures unprovoked by any systemic or acute neurological insult
- It is remarkably distributed around the world, no racial, geographical or social-economic boundary

# Epilepsy

- It can occur on its own or be associated with other conditions of the brain such as cerebral palsy, autism, dementia or traumatic brain injury
- Epilepsy affects at least 50 million people worldwide(WHO,2005)
- It occurs in both sexes, at all ages especially in childhood, adolescence and in ageing population
- The electroencephalograph (EEG) is often very useful in diagnosis

# JUSTIFICATION FOR THE STUDY

- The main stay treatment of epilepsy is anticonvulsant medications, possibly for the persons entire life.
- The aim of antiepileptic drugs is to control and totally prevent all seizures activity at an acceptable level of side effects. With the currently available drugs, this can be achieved in about half of the patients.

# introduction

- Epilepsy is a disorder with many possible causes.
- Epilepsy may develop because of an abnormality in brain wiring, an imbalance in inhibitory and excitatory neurotransmitters, or some combination of these factors
- Traditional systems of medicine are popular in developing countries and most of the population relies on traditional medicines for their primary health care need.



# Introduction

- Different herbal preparations of *Newbuoldia leavis*, *Caesalpinia bonduc* and *Nicotinia tobacum* have been used as bitter, astringent, acrid, thermogenic, anti-inflammatory, antimicrobial, antimalarial, anti-nociceptive, and anticancer etc. (Maria *et al.*, 2007; Adeniyi and Ghazal, 2012; Vibha *et al.*, 2012).
- However, the leaf of these plants have not been screened for anticonvulsive and antiepileptic activities