Abstract

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Experimental animals

e Eighteen t and matured adult male Wistar rats weighing between 80 g-150 g were purchased from the animal house of the Department of Human Anatomy, Cross River University of Technology, Okuku. e entire animals were kept in aluminum cages covered with wire mesh in standard laboratory environment. All animals were given water and commercial feed and allowed to rest and acclimatize for two weeks before commencement of experiment.

Experimental design and procedure

e Eighteen animals were allotted to three groups consisting of six rats each. Animals in group 1 served as the control group, fed with normal rat chew and distilled water, while groups 2 and 3 served as the experimental groups treated with *G. africanum* leaf extract, orally for 21 days. Group 2 (low dose group) animals were treated with 0.3 ml/kg body weight of *G. africanum* leaf extract, while group 3 (high dose group) animals were treated with 0.5 ml/kg body weight of the extract.

Termination of experiment

At the end of experiment, all animals were sacri ced under chloroform anesthesia and the pancreas surgically removed and xed in bouins uid for 24 hours for histological and histochemical studies.

Histological Examination of the Pancreas

Reagents

Haematoxylin, eosin, xylene, alcohol and chloroform

Procedure

Tissue blocks were sectioned at 5 microns using a microtome. Sections were brought to xylene for two minutes per two changes. e xylene was cleared in 95% alcohol for one minute per two changes and then in 70% alcohol for another one minute. is was then hydrated in running tap water for 15 minutes, stained with haematoxylin for 15 minutes, di erentiated in 1% alcohol (3 dips) and blued in running tap water for 10 minutes. e slides were then counter-stained with 1% alcohol eosin for 1 minute followed by rapid dehydration in ascending grades of alcohol, cleared in xylene, mounted with DPX and viewed under light microscope and photographed at 400X magni cation**.**

Result

Photomicrograph of the control animal revealed pancreas showing [illegible] many secretory acini and a lobular duct. General parenchyma shows a normal architecture with a prominent centroacinar cells and there was no observable pathology (Figure 1). e low dose group treated with 0.3 ml/kg body weight of *G. africanum* leaf revealed no pathology as there was a general parenchyma with many secretory acini and a small interlobular duct (Figure 2).

At high dose of 0.5 ml/kg body weight, the pancreas of the animals showed an intraductal papillary mucinous neoplasm within the interlobular duct. A secretory acini and a [illegible] mucinous

low dose (0.3 ml/kg body weight) group showed no pathological signs. Although studies on the e ects of herbs on pancreatic health are limited and some even inconclusive, promising preliminary studies including this one can provide a basis for further research on pancreatic disorders. Solemaini et al. [8] reported that the pancreas generally do not exhibit deleterious e ects in reaction to most leaves but the high dose reaction in this study suggests a mucinous neoplasm in the interlobular duct. Udeh et al. [9] carried out a research on e ects of *G. africanum* on pancreatic islets and discovered that the extract caused a dose-dependent reversal of islet destruction and an increase in antioxidant activity. us, such e ects may not a ect the pancreas ability to secrete insulin but will rather impair secretion of the bi-carbonate rich uid and enzymes into the duodenum thereby limiting the neutralization of acids during digestion. Consequently, it can be inferred that e ects of *G. africanum* on body visceras especially the pancreatic cells may be dose dependent considering the result of this work at high dose (0.5 ml/kg) and other few related work done so far. Subjects who ingest this leaf o en may resultantly face the risk of developing mucinous neoplasmic growths and thus further work on the e ect of this leaf on some digestive tissues and its various associated organs should be investigated.

Conclusion

From the result of the study, the research suggests that consumption of *G. africanum* leaf at a moderate dose may not have e ects on the pancreas except if being consumed in indiscrimate high proportions. Since this leaf is largely consumed in most parts of West Africa, it might have a correlation with the increased reported rate of diabetis insipidus in this region as it may resultantly a ect the ability of the islet cells to secrete insulin.

References

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