

**EFFECT OF *Tetracarpidium conophorum* EXTRACT ON  
TESTOSTERONE-INDUCED BENIGN PROSTATIC HYPERPLASIA IN MALE  
WISTAR RATS**

*By*

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**16PCP0321**



**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF BIOLOGICAL  
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THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.)  
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## ACCEPTANCE

This is to attest that this dissertation is accepted in partial fulfilment of the requirements for the award of Master of Science (M.Sc.) degree in Biochemistry in the Department of Biochemistry, College of Science and Technology, Covenant University Ota, Ogun State, Nigeria.

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## DECLARATION

I, **SALAKO ABIODUN EVELYN** (16PCP01321), declare that this M.Sc. dissertation titled: “Effect of *Tetracarpidium conophorum* extract on testosterone-induced benign prostatic hyperplasia in male *wistar* rats” was undertaken by me under the supervision of Dr. O.E. Omotosho. The work presented in this dissertation has not been presented, either wholly or partly for the award of any degree elsewhere. All sources of scholarly information used in this dissertation were duly acknowledged.

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## CERTIFICATION

We certify that the dissertation titled: “Effect of *Tetracarpidium conophorum* extract on testosterone-induced benign prostatic hyperplasia in male *wistar* rats” is an original work carried out by SALAKO, Abiodun Evelyn with Matriculation Number: 16PCP01321 in the Department of Biochemistry, College of Science and Technology, Covenant University Ota, Ogun State, Nigeria. We have examined the work and found it acceptable for the award of Master of Science (M.Sc.) degree in Biochemistry.

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## **DEDICATION**

I dedicate this work to an ever faithful and merciful God who was with me throughout this work.

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## ABSTRACT

Benign prostatic hyperplasia (BPH) is the enlargement of the prostate, a walnut-sized gland located just below the bladder. Currently, two main treatment options are available for BPH patients: 5-alpha reductase inhibitors (finasteride) and alpha-1-adrenergic receptor antagonists. However, these drugs can produce undesirable side effects. In this study, the levels of antioxidant (superoxide dismutase (SOD), catalase (CAT) and reduced glutathione (GSH)), prostate specific antigen (PSA), relative prostate weight and phytochemicals were investigated in *Tetracarpidium conophorum* leaf extract on the development of BPH in male *Wistar* rat. Thirty (30) animals were randomly divided into six groups of five animals each. All treatments were administered to animals concurrently for four (4) weeks. Group A (normal control) received olive oil subcutaneously and other groups (B, C, D, E and F) received subcutaneous injection of testosterone propionate. *Tetracarpidium conophorum* (100, 200 and 400 mg/kg body weight) was administered by oral gavage daily to Groups C, D and E respectively while Group F received finasteride. From the phytochemical screening result obtained, saponins, phenols, tannin, flavonoid, steroid, glycoside, terpenoids and alkaloids were present. Animals in group E showed significant decrease ( $p < 0.05$ ) in relative prostate weight ( $10 \times 10^{-4} \pm 29 \times 10^{-5}$ g) and serum PSA level ( $91.83 \pm 5.78$ pg/ml) when compared to relative prostate weight ( $17 \times 10^{-4} \pm 84 \times 10^{-6}$ g) and serum PSA level ( $174.8 \pm 3.13$ pg/ml) of group B. However, a significant increase ( $p < 0.05$ ) in group E was observed in the levels of CAT ( $31.74 \pm 1.43$ U/mg protein), SOD ( $52.85 \pm 1.23$ U/mg protein) and GSH ( $16.50 \pm 0.28$ U/ml) when compared to levels of CAT ( $11.04 \pm 0.44$ U/mg protein), SOD ( $33.36 \pm 1.27$ U/mg protein) and GSH ( $7.28 \pm 0.27$ U/mg protein) of group B. It may therefore be concluded that oral administration of *Tetracarpidium conophorum* at 400mg/kg can prevent the development of BPH induced by testosterone.