

**THE EFFECT OF ABO BLOOD GROUP CLASSIFICATIONS ON
BIOCHEMICAL AND ANTIOXIDANT MARKERS OF HEALTHY
ADULTS**

By

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B.Sc. Biochemistry, Covenant University Ota

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**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF BIOLOGICAL
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**IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF
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JUNE, 2017

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 Biological sciences, College of Science and Technology, Covenant University Ota.

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DECLARATION

I, **AGBEYANGI Olubisola Arike** (15PCP00959), hereby declare that this M.Sc. Dissertation titled: “The Effect of ABO Blood Group Classifications on Biochemical and Antioxidant Markers of Healthy Adults” was undertaken by me under the supervisor of Dr. I.S. Afolabi. The work presented in this dissertation has not been presented, either wholly or partly for any degree elsewhere before. All sources of scholarly information used were duly acknowledged.

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CERTIFICATION

We certify that the dissertation titled “The Effect of Abo Blood Group Classifications on Biochemical and Antioxidant Markers of Healthy Adults” is an original work carried out by AGBEYANGI, Olubisola Arike with Matriculation Number: 15PCP00959, of the Biochemistry Programme in the department of Biological Science, College of Science and Technology, Covenant University Ota, Ogun State, Nigeria. We have examined the

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DEDICATION

I dedicate the success of this project work to God alone my unforsaken love and His help towards me all through this work. To Him alone be all the glory.

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ABSTRACT

This research work was aimed at assessing the consequence of ABO blood types on biochemical and antioxidant markers in healthy adult. A total of seventy (n=70) adult of both sexes were recruited into the study. All participants were assumed healthy provided they have not been on medication for a period of two weeks prior to their recruitment. Antioxidant markers assessed includes superoxide dismutase (SOD), glutathione-S-transferase (GST), reduced glutathione (GSH), lipid peroxidation while biochemical markers assessed includes albumin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), creatinine, urea, uric acid, cholesterol, triglyceride and low-density lipoprotein (LDL). Blood group O has the highest frequency of 42 %, while AB has the lowest frequency of 12.9 %. A significant positive correlation was seen between weight and BMI, also a negative correlation was seen between total cholesterol and BMI. The activity of GST and GSH increased significantly ($p < 0.05$) among the blood types for the antioxidant assay in the blood type A, also results of the liver function test reveals that the activity of AST and albumin decreased significantly for the liver function test among the blood types ($p < 0.05$) in blood types A. For the kidney function test, the activity of creatinine increased significantly ($p < 0.05$) while urea reduced significantly ($p < 0.05$) in both blood group A and O. The level of blood total cholesterol increased significantly ($p < 0.05$) in blood group B; but decreased significantly ($p < 0.05$) in blood group A and AB for the lipid profile assayed. The effects of the ABO groups were more pronounced on the antioxidant activity of GST and SOD, and other biochemical parameters such as Total cholesterol, LDL, creatinine, and urea; these may be indicator