STUDY ON INTERPRETING CHEMICAL PROCESSES IN HIGH CONSERVATION OF CITRIC ACID CYCLE IN TERMS OF ELECTRICAL ENGINEERING PROCESSES

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ABSTRACT

The fast growth of molecular modelling as a research tool in biology has been tightly coupled to the advent of supercomputer and to advances in applied and computational mathematics over the past decade. Three features characterize the progress made to date: bigger molecule systems described in atomic detail, longer simulation time scales, and more realistic representations of interatomic forces [1]. With these improvements, molecular modelling by computer has given many insights into the structure and function in cell and simulates it as mathematical equations.

This work is done by studying the chemical processes that occurs in a biological cell to come out with a mathematical equation and simulate the equation using electrical engineering software e.g. MATLAB Simulink. After the equation has been simulated, it will be analyse and compare electrical engineering processes to find the similarities between them.

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CHAPTER 1
INTRODUCTION

1.1 Background

Computational methods are becoming an increasingly important aspect of the evaluation and analysis of experimental data in molecular biology. Computational modelling and prediction methods, such as comparative modelling of protein structure, are now reaching a level of sophistication that allows some experimentation to take place entirely within a computational framework. The use of computational methods towards solving problems in biology is known as bioinformatics [2].

Bioinformatics is a new and rapidly evolving discipline that has emerged from the fields of experimental molecular biology and biochemistry, and from the artificial intelligence (AI), database, pattern recognition, and algorithms disciplines of computer science. One of the researches on bioinformatics explores the functional relationships between the composition of the genes within the context of genome and the structure and function of the proteins encoded by these genes. It is because the interaction of proteins largely determines metabolism, reproduction, from, and health, the implications of bioinformatics studies are far reaching [3]. Amongst other researches on bioinformatics is the metabolic pathways in which chemical processes generates and consumes the products of the processes in order to provide energy to the body in a balance condition. The primary objective of these processes is to product citric acids, which is turn, are to produce adenosine triphosphate (ATP) and thermokinetic model. The main focus of this work is on the processes involved in high conservation of citric acid cycle.