

Title : The study of drug diffusion through a mathematical models

Author(s) : 1. Anulak Umprayoon

Student ID : 640510602

Major : Mathematics

Advisor(s) : 1. Associate Professor Dr. Somchai Sriyab

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ABSTRACT

This independent study is aimed to study the model of the diffusion of paracetamol in the body through the stomach, small intestine, blood vessels, tissues, liver and kidneys at a certain time period and study the change in drug concentration by finding the exact solution and using numerical methods. It was found that the drug concentration in each organ changed as follows: The stomach is the first part that receives the drug with the initial concentration. The drug concentration in the stomach gradually decreases until the concentration is close to zero. When the drug concentration in the stomach starts to decrease for a while, the concentration in the small intestine increases continuously until reach a highest threshold then the drug concentration slightly decreases. After that, the drug concentration in blood vessels, tissues, liver and kidney slightly increases until meet a maximum threshold. Then the blood concentration in those organs slowly decreases.

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