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The Equation Analysis of Linear Pharmacokinetics Models By Akaike’s Information Criterion (AIC) of Diminazene Aceturate in Blood Plasma

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Abstract

A series of compartment models more closely related than equation linear analysis to known facts about drug absorption, distribution, metabolism, excretion (ADME) are presented. It is shown that mathematically such models require the same number of exponential terms in the equation describing the plasma concentration following intramuscular administration as in that describing the plasma concentration following extra vascular administration. This article describes a statistical technique to determined exponential terms of serial time vs. plasma concentration of the drug by the application of Akaike’s information criterion (AIC). Five healthy Etawa breed goat was used as a subject research. Plasma concentrations of diminazene measured following intramuscular injection at single dose administrated were used as clinical examples for research models. A liquid chromatography method has been used for the determination of the analyte in blood plasma. The objective of this research was as follows: To obtain optimum exponential linear pharmacokinetics equation as a represented of diminazene kinetic profile in body plasma. The research result shown the exponential linear pharmacokinetics equation in all subject was triexponential with AIC mean values at range 72.03 ± 21.43 (p<0.05).

Keyword : diminazene, aceturate, goats, plasma, pharmacokinetic, linear, AIC,