Math in Pharmacokinetics

- First-Order Elimination Kinetics

First-Order Elimination Kinetics

For most drugs, the amount of drug eliminated from the body during any time interval is proportional to the total amount of drug present in the body. In pharmacokinetic terms, this is called first-order elimination and is described by the equation



Separating variables:



Integrating from 0 to t, where the amount is C_0 to C:



So that:



And:



Taking exponetial:



It is particularly useful because it can be rearranged in the form of the equation for a straight line to give

There is a real-world example:

