Case Study 6 **Dose Optimization – I (Fall 2012)** PHA 5127

1) Identify the Pharmacokinetic metrics: **Dose, Volume of Distribution or the Clearance** (only pick one per scenario), whose changes would determine the differences observed in the following concentration time profiles. (eg: The structure of the answer would look like – The changes in the profiles of Fig A would be because of ____ parameter)

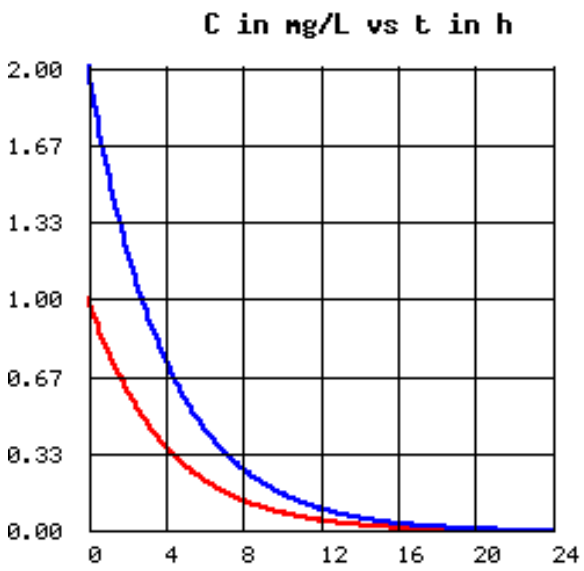


Fig A

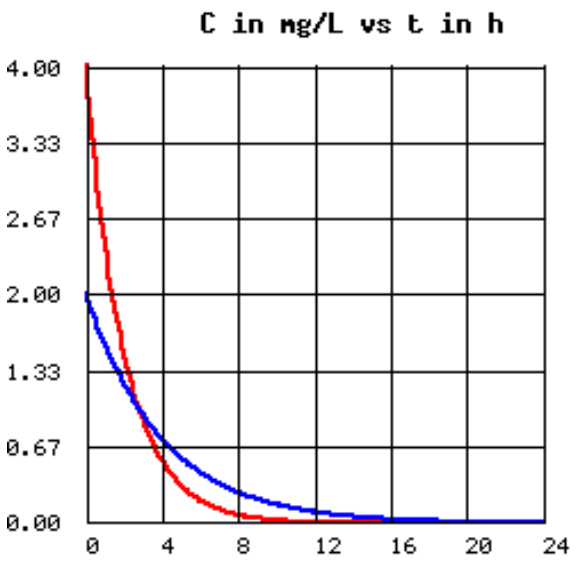


Fig B

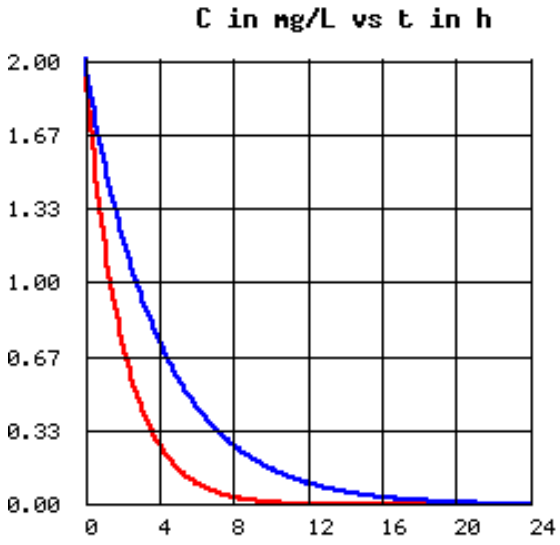


Fig C

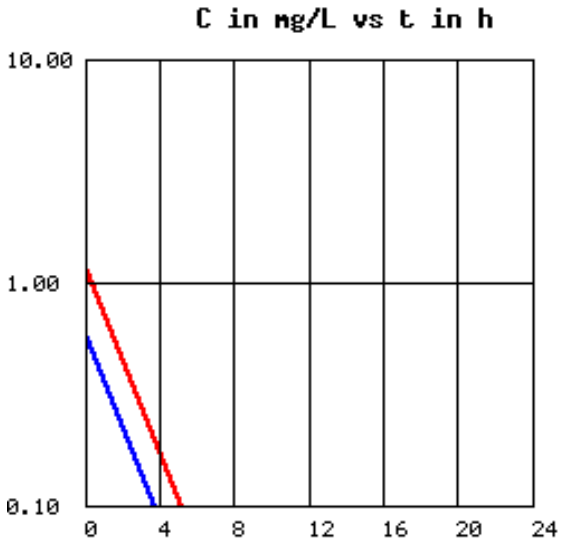
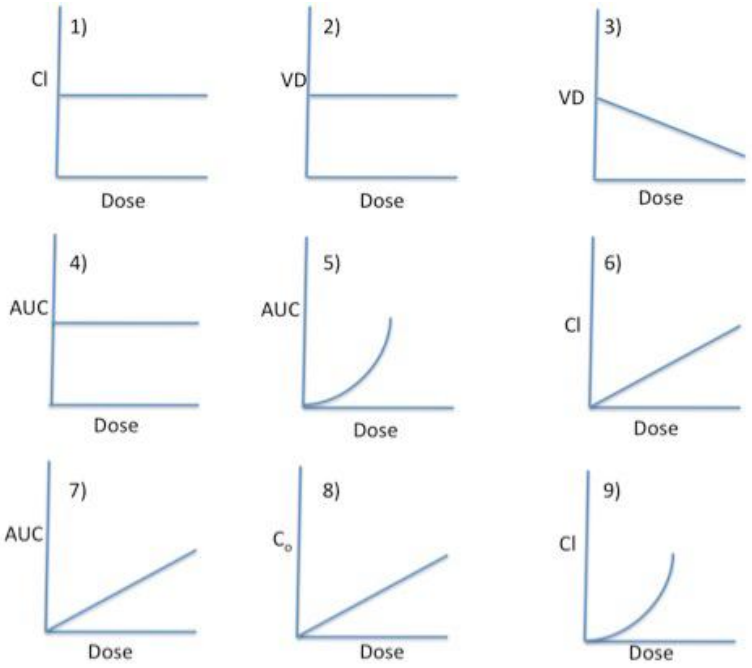


Fig D

Problem 2

Select the schemes that follow linear pharmacokinetics



Problem 3

A company had manufactured two formulations – FAST and SLOW (sustained release) for a given Drug A. The absorption rate constants of formulation FAST and SLOW are 1 h^{-1} and 0.02 h^{-1}, respectively. Plot the concentration-time-profile from 0-24 h for both formulations when the same dose of both formulations is given. Which formulation shows a "flip-flop"-kinetic?