

PHA5127 – Dose Optimization I
Case Study 4
Fall 2013

Question 1

The drug concentration entering and leaving the liver were 9.5 and 3.1 ng/mL, respectively. Assume that the liver blood flow is 1500 mL/min. Estimate the hepatic clearance in unit of L/h.

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Question 3 TRUE or FALSE

- 1 For low extraction drugs that are 99% protein bound, a displacement by a competitor by 1% to 98% protein binding will result in a two-fold increase in the steady-state total drug concentration (total of bound plus free drug).

- 2 For high-extraction antibiotics that are 99.9% protein bound, displacement by a competitor by 0.1% to 99.8% protein bound will often result in an increase in their pharmacological effects.

- 3 Plasma protein binding is independent of liver blood flow

- 4 A change in the volume of distribution is often due to a change in systemic clearance

- 5 When hepatic biotransformation enzymes are induced, only high extraction drugs are affected.

- 6 Plasma protein binding is synonymous to tissue binding