

**Homework 2**

**Bio pharmaceutics & Pharmacokinetics/PHAR434**

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**A new antibiotic drug was given in a single intravenous bolus of 4 mg/kg to 5 healthy male adults ranging in age from 23 to 38 years (average weight 75 kg). The pharmacokinetics of the plasma drug concentration–time curve for this drug fits a one-compartment model. The equation of the curve that best fits the data is:**

**Determine the following (assume units of *mc*g/mL for *C*p and hours for *t*):**

**a.** What is the *t*1/2? 

**b.** What is the *V*D?

**c.** What is the plasma level of the drug after 4 hours?

**d.** How much drug is left in the body after 4 hours?

**e.** Predict what body water compartment this drug might occupy and explain why you made this prediction.

**f.** Assuming the drug is no longer effective when levels decline to less than 2 *mc*g/mL, when should you administer the next dose?

