

### EXERCISE 01: Pharmacokinetics of Aztreonam

(Adapted from Cuzzolin et al., "Pharmacokinetic and renal tolerance of aztreonam in premature infants," Antimicrobial Agents and Chemotherapy, 1991)

To study the pharmacokinetics of aztreonam, researchers administered a dose of **163.96 mg** to a subject. The plasma concentrations of the drug are presented in the table below.

Time (h)	[Aztreonam] $\mu\text{g/ml}$
1	40.5
2	35
3	30
4	26
5	22.5
6	19.5
7	16.5
8	15

#### **Questions:**

1. Which pharmacokinetic model should be selected to study the pharmacokinetics of aztreonam?
2. Graphically determine the plasma concentration of aztreonam at  $t_0$  and the half-life ( $t_{1/2}$ ).
3. Calculate:  $k_e$ ,  $V_d$ , and  $Cl_{tot}$ .