

No 4.

$$K_D = \frac{C_{et}}{C_{aq}} = 0.3$$

Volume eter 100 ml

Volume air 500 ml

• Ekstraksi pertama

$$K_D = 3.0 = \frac{(4 - x_1) / 0.1}{x_1 / 0.5}$$

$$3.0 = \frac{4 - x_1}{0.1} : \frac{x_1}{0.5}$$

$$3.0 = \frac{4 - x_1}{0.1} \times \frac{0.5}{x_1}$$

$$3.0 = \frac{2 - 0.5x_1}{0.1x_1}$$

$$0.3x_1 = 2 - 0.5x_1$$

$$0.3x_1 + 0.5x_1 = 2$$

$$0.8x_1 = 2$$

$$x_1 = \frac{2}{0.8}$$

$x_1 = 2.5$ g ditapisan air dan 1.5 ditapisan eter.

• Ekstraksi ke dua

$$K_D = 3.0 = \frac{(2.5 - x_2) / 0.1}{x_2 / 0.5}$$

$$3.0 = \frac{2.5 - x_2}{0.1} : \frac{x_2}{0.5}$$

$$3 = \frac{X_2 \cdot 2.5 - X_2}{0.1} \times \frac{0.5}{X_2}$$

$$3 = \frac{1.25 - 0.5X_2}{0.1X_2}$$

$$0.3X_2 = 1.25 - 0.5X_2$$

$$0.3X_2 + 0.5X_2 = 1.25$$

$$0.8X_2 = 1.25$$

$$X_2 = \frac{1.25}{0.8}$$

$X_2 = 1.56$ g dilarutkan air dan 0.94 dilepaskan eter

• Ekstraksi ketiga.

$$K_D = 3 = \frac{(1.56 - X_3) / 0.1}{X_3 / 0.5}$$

$$3 = \frac{1.56 - X_3}{0.1} : \frac{X_3}{0.5}$$

$$3 = \frac{1.56 - X_3}{0.1} \times \frac{0.5}{X_3}$$

$$3 = \frac{0.78 - 0.5X_3}{0.1X_3}$$

$$0.3X_3 = 0.78 - 0.5X_3$$

$$0.3X_3 + 0.5X_3 = 0.78$$

$$0.8X_3 = 0.78$$

$$X_3 = \frac{0.78}{0.8} = 0.975 \text{ g dilarutkan air dan } 0.585 \text{ g dilepaskan eter}$$

• ekstraksi keempat

$$K_D = 3 = \frac{(0,975 - X_4) / 0,1}{X_4 / 0,5}$$

$$3 = \frac{(0,975 - X_4)}{0,1} \times \frac{0,5}{X_4}$$

$$3 = \frac{0,4875 - 0,5X_4}{0,1 X_4}$$

$$0,3 X_4 = 0,4875 - 0,5 X_4$$

$$0,3 X_4 + 0,5 X_4 = 0,4875$$

$$0,8 X_4 = 0,4875$$

$$X_4 = \frac{0,4875}{0,8}$$

$X_4 = 0,609$ g lapisan air & $0,366$ g lapisan eter.

ekstraksi kelima.

$$K_D = 3 = \frac{(0,609 - X_5) / 0,1}{X_5 / 0,5}$$

$$3 = \frac{(0,609 - X_5)}{0,1} \times \frac{0,5}{X_5}$$

$$3 = \frac{0,3045 - 0,5X_5}{0,1 X_5}$$

$$0,3 X_5 = 0,3045 - 0,5 X_5$$

$$0,8 X_5 = 0,3045$$

$X_5 = \frac{0,3045}{0,8} = 0,38$ g lapisan air & $0,23$ g lapisan eter.

Total yang terestiraksi pd pelarut eter: ~~1.5446 + 0.94 + 0.85~~

$$1.59 + 0.94 + 0.85 + 0.366 + 0.23$$

$$= 3.71 \text{ gram.}$$

b). ~~semakin banyak~~

V eter yang digunakan 100 ml.

semakin sedikit eter yang digunakan sebagai pelarut maka asam butirat yang terestiraksi semakin sedikit.

5). Pd gambar 2-3

$$K_D = \frac{C_B}{C_A}$$

$$W_0 = W_A + W_B$$

$$W_B = C_B V_B$$

$$W_A = C_A V_A$$

$$\text{Fraksi A} = \frac{W_A}{W_0} = \frac{C_A V_A}{W_A + W_B}$$

$$= \frac{C_A V_A}{C_A V_A + C_B V_B}$$

$$= \frac{V_A}{V_A + \frac{C_B}{C_A} V_B}$$

$$= \frac{V_A}{V_A + K_D V_B}$$

Bat yang terhisap dilapiskan air

$$W_{A1} = W_0 \left(\frac{V_A}{V_A + K_D V_B} \right)^5$$

↑
Volume air
Volume ester

$$W_{A1} = 4 \left(\frac{500 \text{ ml}}{500 \text{ ml} + 3(100 \text{ ml})} \right)^5$$

$$= 4 \left(\frac{500 \text{ ml}}{800 \text{ ml}} \right)^5$$

$$= 4 (0.625)^5$$

$$= 4 (0.095)$$

$$= 0.38 \text{ asam butirat yg terhisap dilapiskan air.}$$