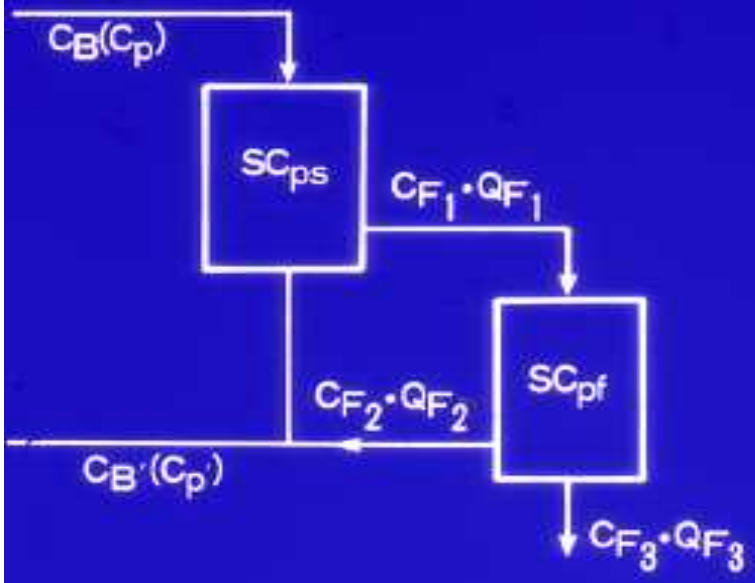
(図2) DFPPのkinetic model

ncentration Coefficient in Double Filtration Plasmapheres



$SC_{ps} = C_{F_1}/C_p$ ……(1) (sieving coefficient of plasma separator)

$SC_{pf} = C_{F_2}/C_{F_1}$ ……(2) (sieving coefficient of plasma fractionator)

$Q_{F_3}/Q_{F_1} = K$ ……(3) (discard ratio)

From mass balance in plasma fractionator,

$C_{F_1} \cdot Q_{F_1} = C_{F_2} \cdot Q_{F_2} + C_{F_3} \cdot Q_{F_3}$ …(4). From (3),

$Q_{F_3} = k \cdot Q_{F_1}$ …(5). $Q_{F_2} = Q_{F_1} - Q_{F_3} = (1-k) Q_{F_1}$ …(6).

From (2), $C_{F_2} = SC_{pf} \cdot C_{F_1}$ …(7). Substituting (5) (6) and (7)

into (4), $C_{F_1} \cdot Q_{F_1} = SC_{pf} \cdot C_{F_1} \cdot (1-k) Q_{F_1} + C_{F_3} \cdot k \cdot Q_{F_1}$

$C_{F_1} = (1-k) SC_{pf} \cdot C_{F_1} + k \cdot C_{F_3}$

$\therefore C_{F_3}/C_{F_1} = [1-(1-k)SC_{pf}]/k$

$$\therefore C.C. = C_{F_3}/C_p = \frac{C_{F_3}/C_{F_1}}{C_p/C_{F_1}} = \frac{[1-(1-k)SC_{pf}]/k}{1/SC_{ps}} = \left(\frac{1}{k} - \frac{1-k}{k} SC_{pf}\right) SC_{ps}$$