

$$\frac{2e^{-\beta_b h_1 i} e^{-\beta_b h_2 i} (\beta_b^2 e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} + \beta_b^2 e^{\beta_b (h_1+h_2) 2i} e^{\beta_b h_2 i} - \beta_b \beta_c e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} + \beta_b \beta_c e^{\beta_b (h_1+h_2) 2i} e^{\beta_b h_2 i})}{\beta_a \beta_b - \beta_a \beta_c + \beta_b \beta_c + \beta_b^2 e^{\beta_b (h_1+h_2) 2i} - \beta_b^2 + \beta_a \beta_b e^{\beta_b (h_1+h_2) 2i} + \beta_a \beta_c e^{\beta_b (h_1+h_2) 2i} + \beta_b \beta_c e^{\beta_b (h_1+h_2) 2i}} \quad (1)$$

$$- \frac{e^{-\beta_b h_1 i} e^{-\beta_b h_2 i} (\beta_a - \beta_b) (\beta_b e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} - \beta_c e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} + \beta_b e^{\beta_b (h_1+h_2) 2i} e^{\beta_b h_2 i} + \beta_c e^{\beta_b (h_1+h_2) 2i} e^{\beta_b h_2 i})}{\beta_a \beta_b - \beta_a \beta_c + \beta_b \beta_c + \beta_b^2 e^{\beta_b (h_1+h_2) 2i} - \beta_b^2 + \beta_a \beta_b e^{\beta_b (h_1+h_2) 2i} + \beta_a \beta_c e^{\beta_b (h_1+h_2) 2i} + \beta_b \beta_c e^{\beta_b (h_1+h_2) 2i}} \quad (2)$$

$$\frac{e^{\beta_b (h_1+h_2) i} e^{-\beta_b h_1 i} e^{-\beta_b h_2 i} (\beta_b - \beta_c) (-\beta_a e^{\beta_b h_2 i} + \beta_b e^{\beta_b h_2 i} + \beta_a e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} + \beta_b e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i})}{\beta_a \beta_b - \beta_a \beta_c + \beta_b \beta_c + \beta_b^2 e^{\beta_b (h_1+h_2) 2i} - \beta_b^2 + \beta_a \beta_b e^{\beta_b (h_1+h_2) 2i} + \beta_a \beta_c e^{\beta_b (h_1+h_2) 2i} + \beta_b \beta_c e^{\beta_b (h_1+h_2) 2i}} \quad (3)$$

$$\frac{2\beta_b e^{\beta_b (h_1+h_2) i} e^{-\beta_b h_1 i} e^{-\beta_b h_2 i} (-\beta_a e^{\beta_b h_2 i} + \beta_b e^{\beta_b h_2 i} + \beta_a e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i} + \beta_b e^{\beta_b (h_1+h_2) i} e^{\beta_b h_1 i})}{\beta_a \beta_b - \beta_a \beta_c + \beta_b \beta_c + \beta_b^2 e^{\beta_b (h_1+h_2) 2i} - \beta_b^2 + \beta_a \beta_b e^{\beta_b (h_1+h_2) 2i} + \beta_a \beta_c e^{\beta_b (h_1+h_2) 2i} + \beta_b \beta_c e^{\beta_b (h_1+h_2) 2i}} \quad (4)$$