

ERRATA CORRIGE for the book “Feedback Control in Systems Biology”, by Carlo Cosentino and Declan Bates, CRC Press, 2011

1. P. 24, Table (2.1)

$$\sin(\omega t) = 0.5(e^{i\omega t} - e^{-i\omega t})/i$$

$$e^{\alpha t} \sin(\omega t) = 0.5(e^{(\alpha+i\omega)t} - e^{(\alpha-i\omega)t})/i$$

2. P. 26, Eq. (2.11):

$$G(s): s \in \mathbb{C} \mapsto C(sI - A)^{-1}B + D \in \mathbb{C}$$

3. P. 58, Fig. 2.23:

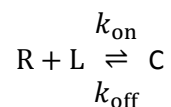
PKA does not exert any inhibition on RegA, therefore the corresponding blunt arrow in the cartoon should be deleted. Moreover, a blunt arrow between PKA and ACA should be added, to indicate the PKA activity is responsible for the inhibition of activation of adenylyl cyclase.

4. P. 59, Eq. (2.60):

$$\frac{d}{dt} \begin{bmatrix} C^* \\ L^{**} \end{bmatrix} = \begin{bmatrix} -\frac{k_{14}}{k_{\text{off}}} & 1 \\ 0 & -\frac{k_{12}}{k_{\text{off}}} \end{bmatrix} \begin{bmatrix} C^* \\ L^{**} \end{bmatrix} + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

5. P. 70, Eq. (3.10):

The ligand species should be denoted by “L” to be consistent with the subsequent equations, therefore, the correct eq. is



Accordingly, the subsequent line should read

“which describes the reversible binding of a ligand L to a receptor molecule R”

6. P. 79, Fig. 3.6:

The labels of the two dashed circles must be swapped:

- the inner circle is the locus of points $x: \|x\| = \delta$;
- the outer circle is the locus of points $x: \|x\| = \varepsilon$;

7. P. 125, L. 2:

“The steady-state error can be computed by applying the **final** value theorem*, ...”

8. P. 125, footnote:

“*The final value theorem states that if $F(s) = \int_0^\infty f(t)e^{-st}dt$ then $\lim_{t \rightarrow \infty} f(t) = \lim_{s \rightarrow 0} sF(s)$.”

9. P. 170, Eq. (5.15a):

$$\frac{dMos}{dt} = -\frac{V_2 \cdot Mos}{K_2 + Mos} + V_0 \cdot \omega + V_1$$

10. P. 218, line before Eq. (7.14):

“...be $Y, Z \in \mathbb{R}^{20 \times 5}$, ... ”

11. P. 222, line after Eq. (7.19):

“... where $\Theta \in \mathbb{R}^{(n+1) \times n}$ is ... ”

12. P.216, Eq. (7.7):

$$y(k) = \sum_{j=1}^n c_j x_j(k) + v(k) = c^T x(k) + v(k)$$