

(B)

model I: membrane protein allocation is held constant

$$\frac{\phi_{peri}}{\phi_{mem}} = \frac{12}{\pi(3\alpha - 1)} \frac{m_{peri}}{\rho_{prot} \phi_{mem}^*} \frac{1}{w^3}$$

constant per-cell periplasmic protein mass

constant average aspect ratio

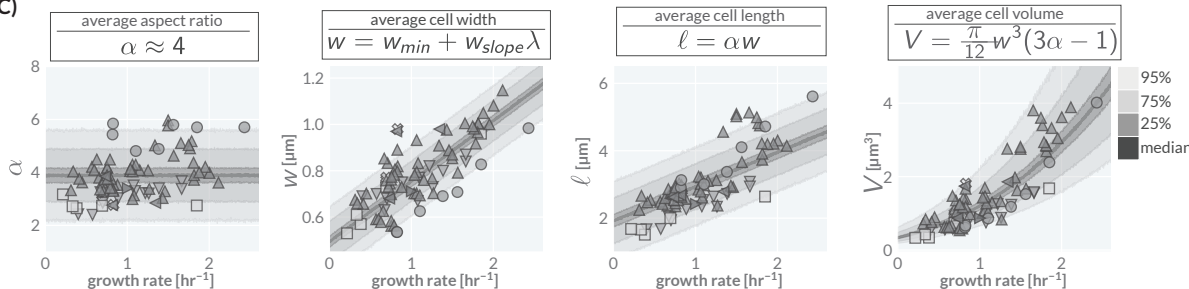
constant allocation toward membrane proteins

model II: membrane protein density is held constant

$$\frac{\phi_{peri}}{\phi_{mem}} = \frac{m_{peri}}{2\alpha\pi\rho_{mem}} \frac{1}{w^2}$$

constant allocation toward membrane proteins

(C)



(D)

