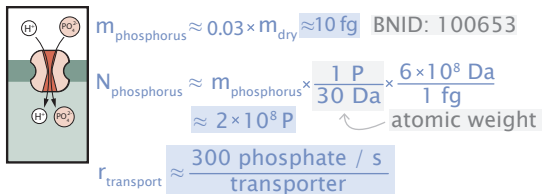
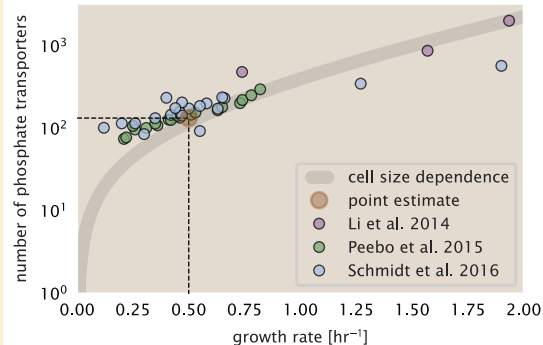


(A)

phosphorus transport

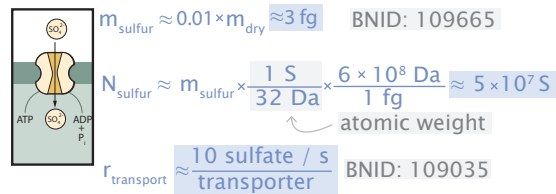


$$N_{\text{transporters}} \approx \frac{2 \times 10^8 \text{ P}}{\text{cell}} \times \frac{1 \text{ phosphate}}{1 \text{ P}} \times \frac{1 \text{ s}}{300 \text{ phosphate}} \times \frac{1 \text{ cell}}{5000 \text{ s}} \approx 150 \text{ transporters}$$



(B)

sulfur transport



$$N_{\text{transporters}} \approx \frac{5 \times 10^7 \text{ S}}{\text{cell}} \times \frac{1 \text{ sulfate}}{1 \text{ S}} \times \frac{1 \text{ s}}{10 \text{ sulfate}} \times \frac{1 \text{ cell}}{5000 \text{ s}} \approx 1000 \text{ transporters}$$

