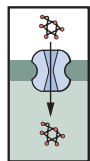


(A)

generic carbon transport



$$m_{\text{carbon}} \approx \frac{m_{\text{dry}}}{2} \approx 0.15 \text{ pg} \quad \text{BNID: 100649}$$

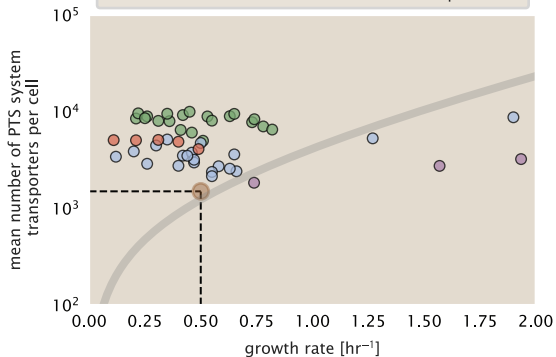
$$r_{\text{transport}} \approx \frac{200 \text{ sugars / sec}}{\text{transporter}} \quad \text{BNID: 103693}$$

$$N_{\text{carbon}} \approx m_{\text{carbon}} \times \frac{1 \text{ carbon}}{12 \text{ Da}} \times \frac{6 \times 10^{11} \text{ Da}}{1 \text{ pg}} \approx 10^{10} \text{ C}$$

atomic weight

$$N_{\text{transporters}} \approx \frac{10^{10} \text{ C}}{\text{cell}} \times \frac{1 \text{ sugar}}{6 \text{ C}} \times \frac{1 \text{ sec}}{200 \text{ sugars}} \times \frac{1 \text{ cell}}{5000 \text{ s}} \approx 1500 \text{ transporters}$$

- point estimate
- Schmidt et al. 2016
- Li et al. 2014
- Valgepea et al. 2013
- Peebo et al. 2015
- cell size dependence



(B)

specific carbon transport

- estimate
- ⊗ Schmidt et al. 2016
- ◇ Peebo et al. 2015
- Li et al. 2014
- △ Valgepea et al. 2013
- induced expression

