

WHAT SETS THE TIMESCALE OF CELL DIVISION?

 ≈ 5000 sec

(A)

nutrient transport

carbon

≈ 5000 transporters



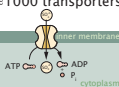
phosphate

≈ 300 transporters



sulfate

≈ 1000 transporters

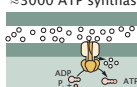


(B)

energy production

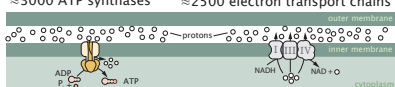
ATP synthesis

≈ 3000 ATP synthases



proton gradient generation

≈ 2500 electron transport chains

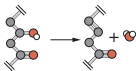


(C)

cell envelope biogenesis

lipid synthesis

≈ 4000 dehydratases



peptidoglycan maturation

≈ 100 transpeptidases

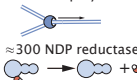


(D)

central dogma

replication

≈ 50 DNA polymerases



transcription

≈ 5000 RNA polymerases



translation

$\approx 10,000$ ribosomes

