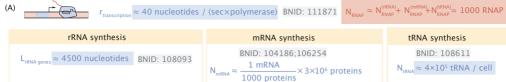
RNA SYNTHESIS



 $r_{\text{PNAR leading}} \approx 1 / 2 \text{ sec BNID: } 111997$ $L_{RNAP \text{ spacing}} \approx \frac{\Gamma_{\text{transcription}}}{\Gamma_{\text{phan leading}}} \approx 80 \text{ nucleotides}$

 $N_{RNAP}^{(rRNA)} \approx L_{rRNA\ genes} \times N_{rRNA\ genes} \times L_{RNAP\ spacing} \approx 500\ RNAP$

(B)

≈3000 mRNA (at steady state) $r_{\text{degradation}} \approx 1 \text{ mRNA} / 300 \text{ s}$ BNID:111927

L_{mRNA} ≈ 1000 nucleotides BNID:100022

 $N_{RNAP}^{(mRNA)} \approx \frac{N_{mRNA} \times r_{degradation} \times L_{mRNA}}{r} \approx 250 \text{ RNAP}$

BNID:102340 L, NA ≈ 80 nucleotides / tRNA

≈ 150 RNAP

