

# dNTP synthesis



$r_{\text{ribonucleotide reductase}}$

$$\approx \frac{10 \text{ dNTP / sec}}{\text{ribonucleo reductase}}$$

Ge et al. 2003

$$L_{\text{genome}} \approx 5 \times 10^6 \text{ base pairs}$$

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$$N_{\text{dNTPs}} \approx 2L_{\text{genome}} \approx 10^7 \text{ dNTPs}$$

$$N_{\text{ribonucleotide reductases}} \approx \frac{10^7 \text{ dNTPs}}{1 \text{ cell}} \times \frac{1 \text{ sec}}{10 \text{ dNTPs}} \times \frac{1 \text{ cell}}{5000 \text{ sec}} \approx 200 \text{ ribonucleotide reductases}$$

**scaling with DNA content**

● estimated value

● Li et al. 2014

● Peebo et al. 2015

● Schmidt et al. 2016

● Valgepea et al. 2013

