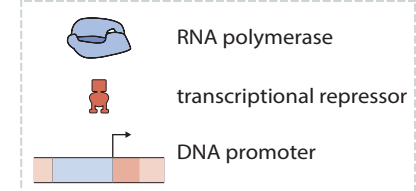
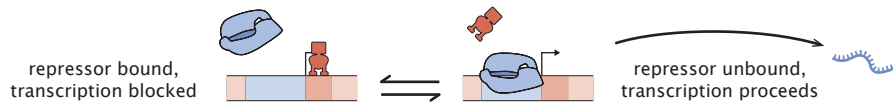
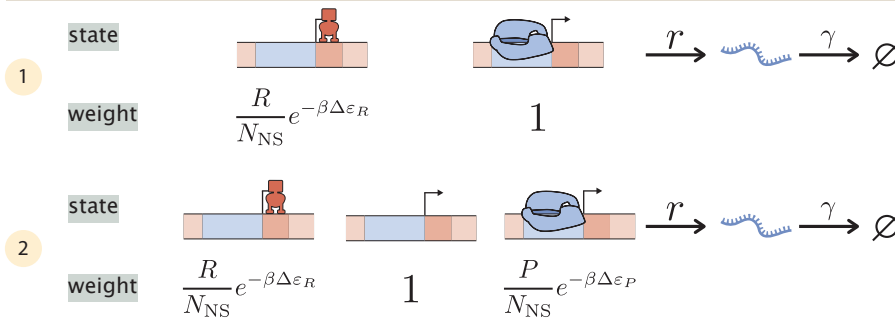


(A) CANONICAL TRANSCRIPTIONAL REGULATION CARTOON



(B) EQUILIBRIUM MODELS

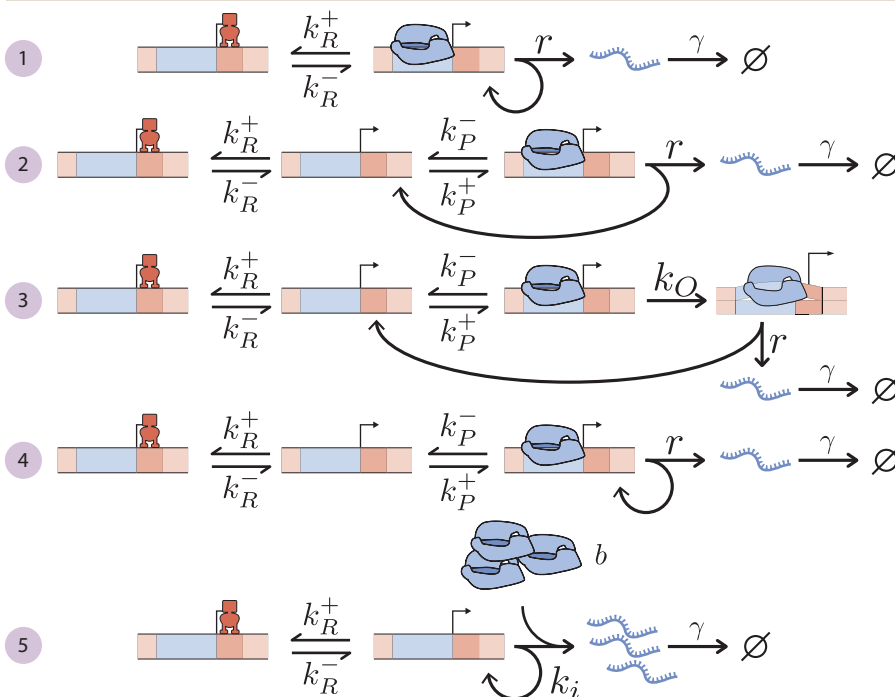


DETAILS OF PROMOTER MODELS

$$\rho = 1$$

$$\rho = 1 + \frac{P}{N_{NS}} e^{-\beta \Delta \epsilon_P}$$

(C) NONEQUILIBRIUM MODELS



$$\rho = 1$$

$$\rho = 1 + \frac{k_P^+}{k_P^- + r}$$

$$\rho = 1 + \frac{k_P^+(k_O + r)}{r(k_P^- + k_O)}$$

$$\rho = 1 + \frac{k_P^+}{k_P^-}$$

$$\rho = 1$$

(D) THE MASTER CURVE FOR SIMPLE REPRESSION

$$\text{fold-change} = (1 + \exp(-\Delta F_R + \log(\rho)))^{-1}$$

$$\Delta F_R = \beta \Delta \epsilon_R - \log \left(\frac{R}{N_{NS}} \right) \text{ (equilibrium)}$$

$$\Delta F_R = -\log \left(\frac{k_R^+}{k_R^-} \right) \text{ (nonequilibrium)}$$

