

[STABILITA' OPERAZIONALE]

02/11/15

CSTR $\frac{d[P]}{dt} = r_p - [P]/\tau$

(1)

ACC = GEN - OUT

$(t=0, [P]=0)$

$\frac{d[P]}{dt} = v_{\max,0} \exp(-k_d t) - [P]/\tau$

(Ordine zero di reazione)

$\theta = t/\tau, \pi = [P]/\tau v_{\max,0}$

$d\pi/d\theta = \exp(-z k_d \theta) - \pi$

$\theta=0, \pi=0$

$\pi(\theta) = \frac{1}{z k_d - 1} \left[e^{-\theta} - e^{-z k_d \theta} \right]$

$z k_d \ll 1 \quad (1/k_d \gg \tau \Rightarrow \text{disattivazione lenta})$

$\lim_{\theta \rightarrow \infty} \pi(\theta) \approx e^{-z k_d \theta}$

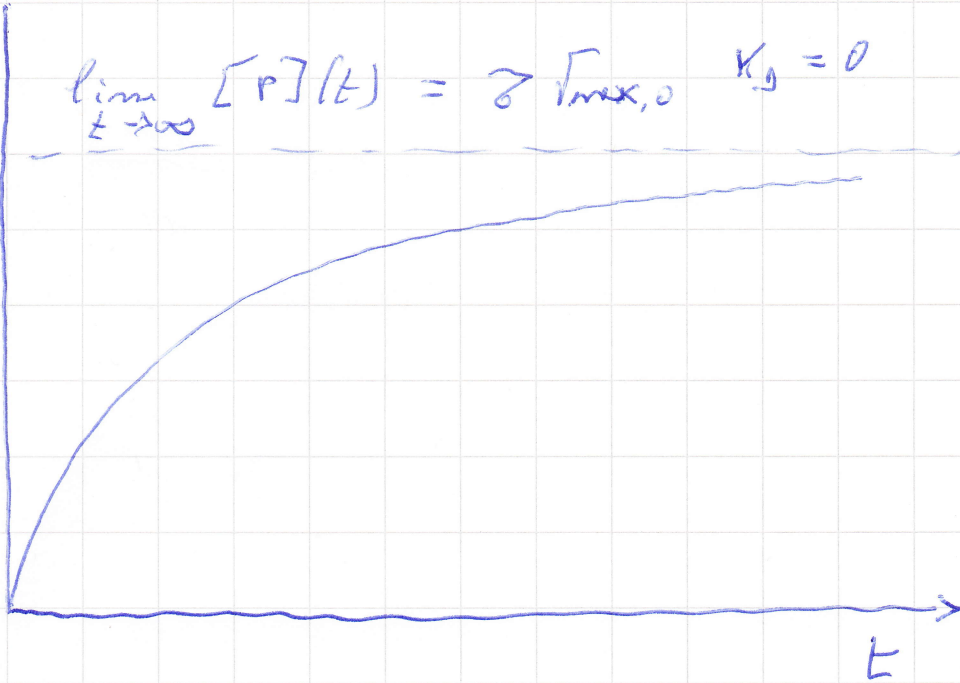
$\lim_{t \rightarrow \infty} [P](t) \approx \tau v_{\max,0} e^{-k_d t}$

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(2)

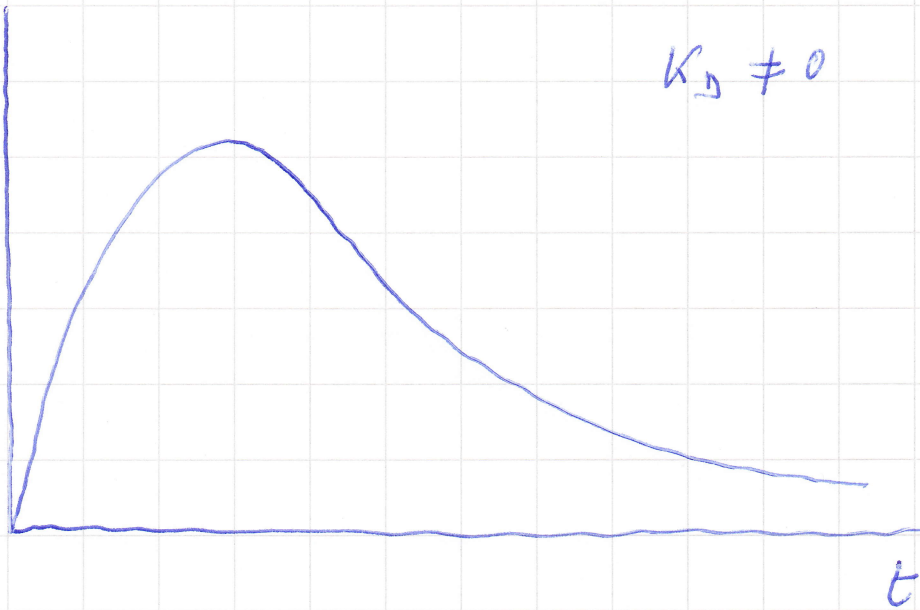
[P]

$$\lim_{t \rightarrow \infty} [P](t) = \delta \Gamma_{\max,0} \quad K_D = 0$$



[P]

$$K_D \neq 0$$



$\rho_m [P]$

$$\delta \Gamma_{\max,0}$$

