

*XIII Escola de Verão em Química Farmacêutica
e Química Medicinal*

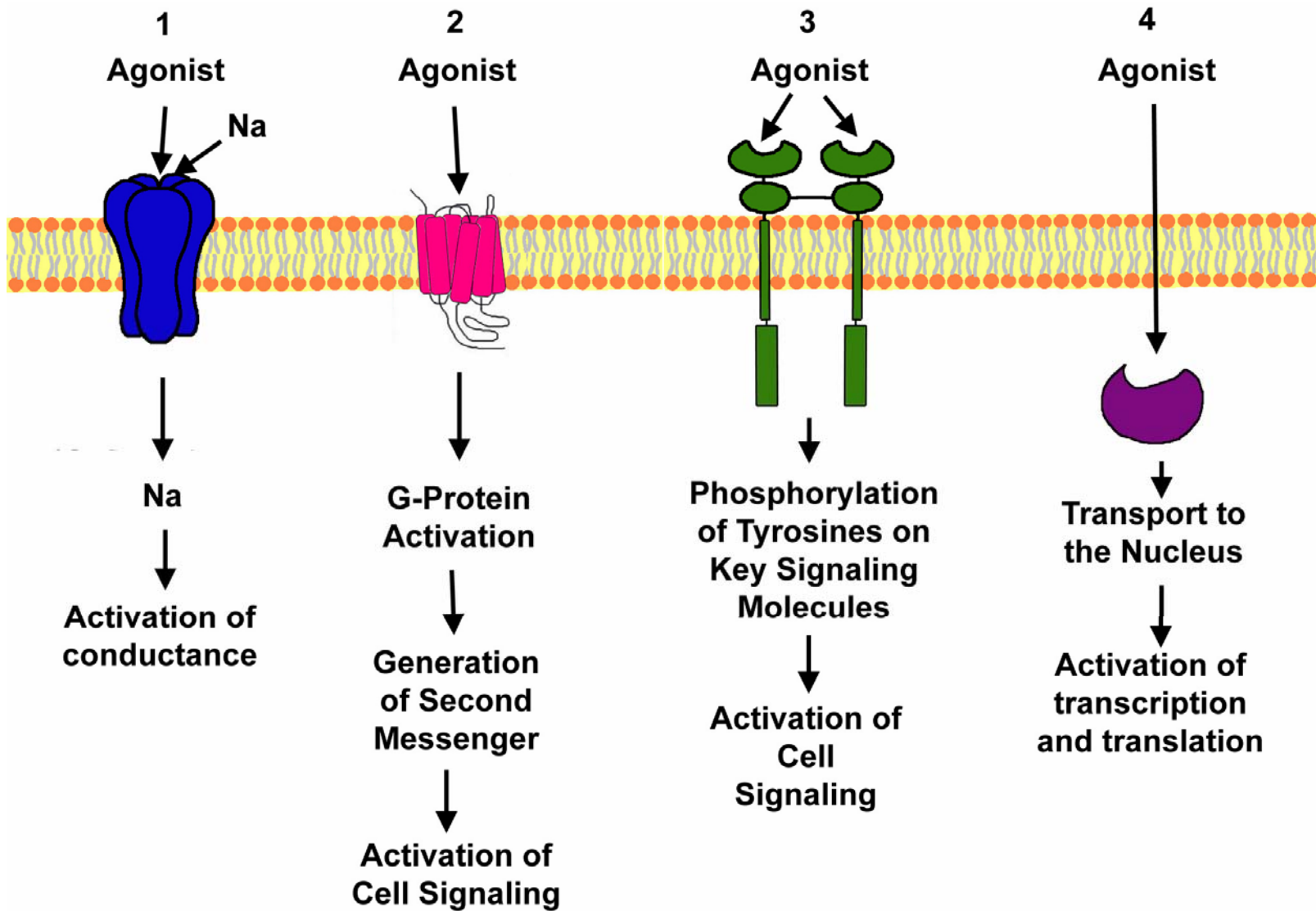
Princípios Básicos de Farmacologia

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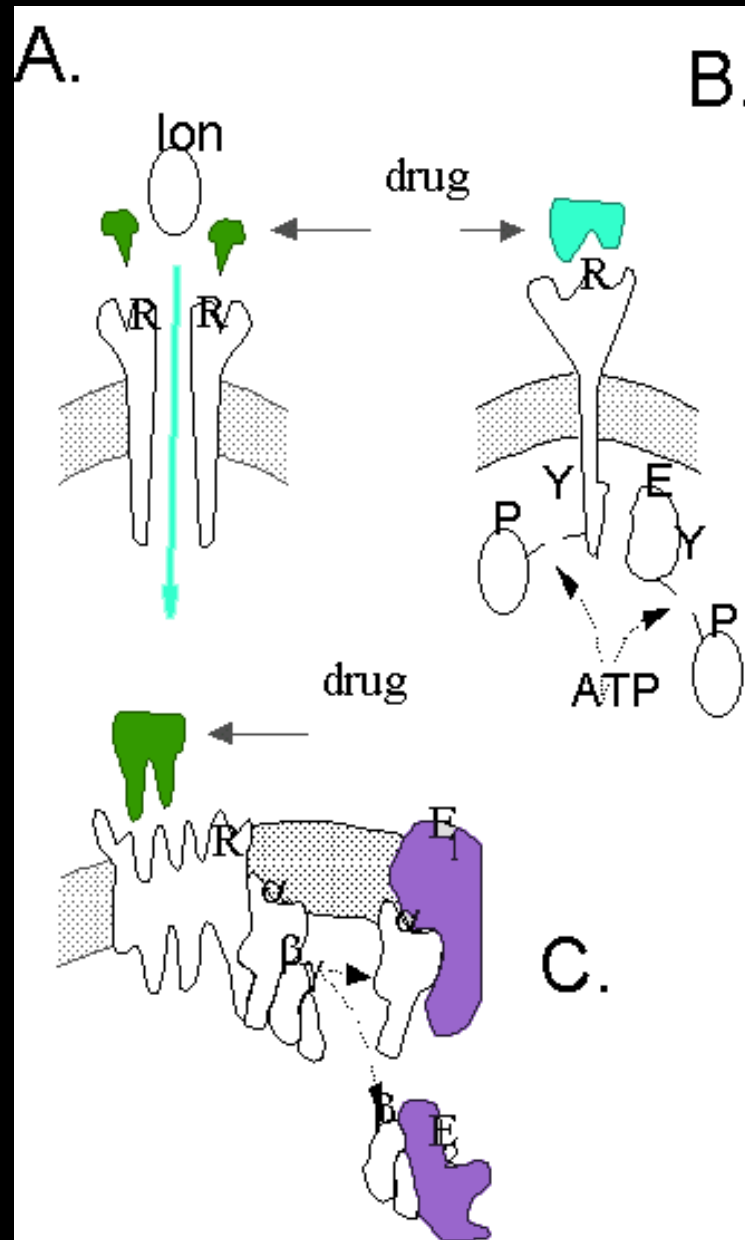
Fevereiro, 2007.

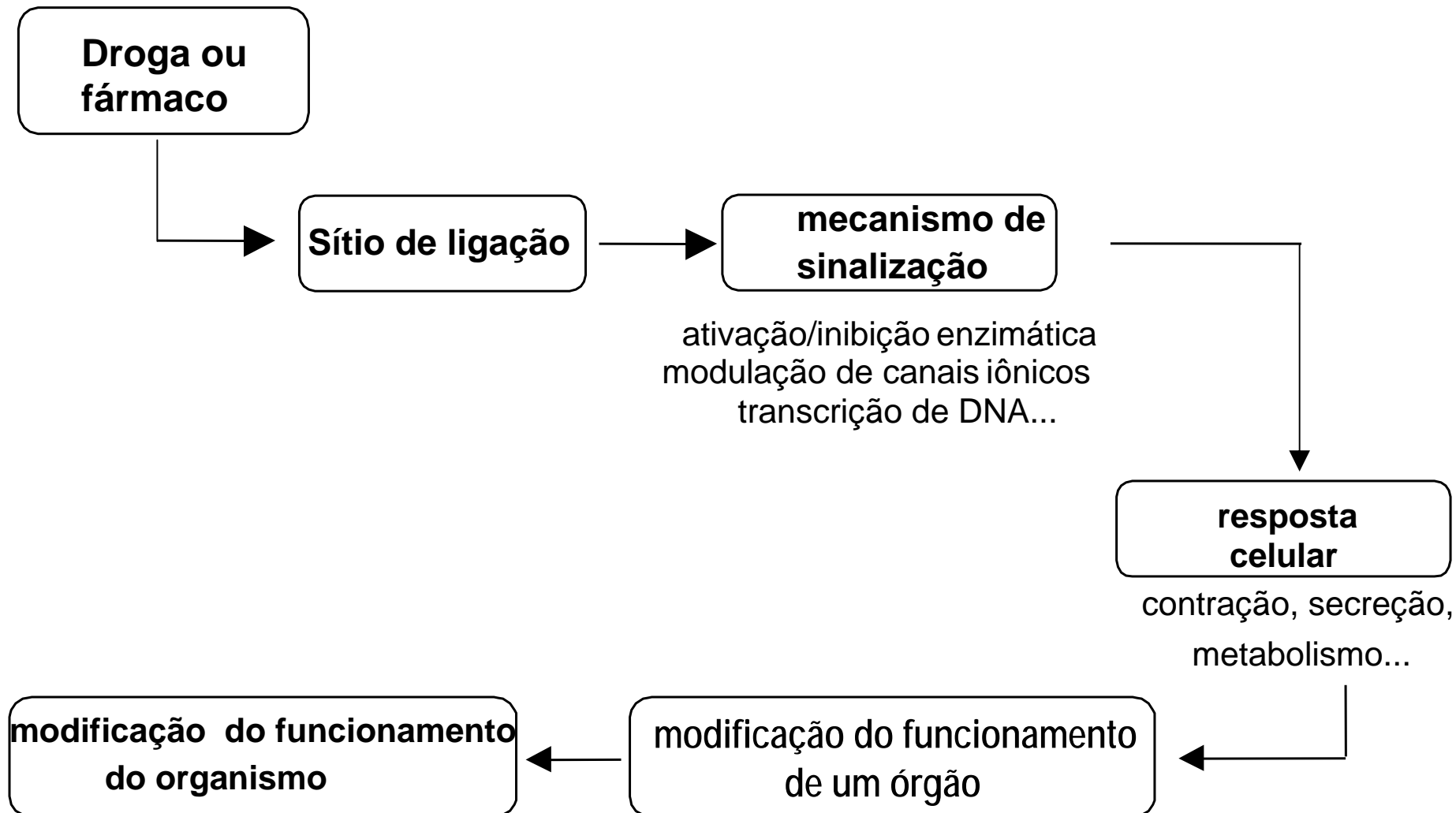
Receptor Biológico

- Saturabilidade
- Especificidade
- Reversibilidade
- Restabelecimento da função por reconstituição
- Identificação do gene associado



The pharmacologist's dream!!!!

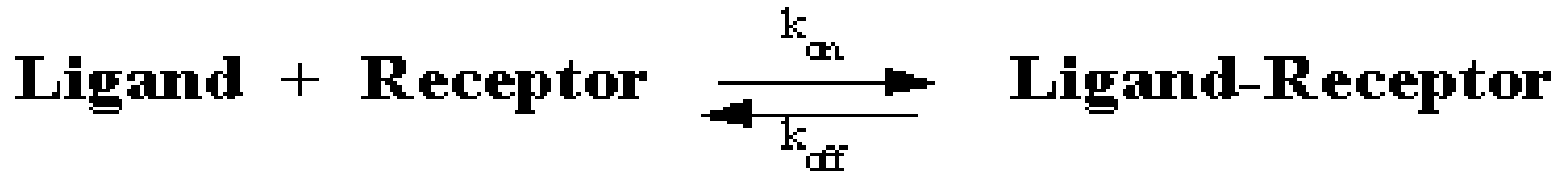




Hill, 1909

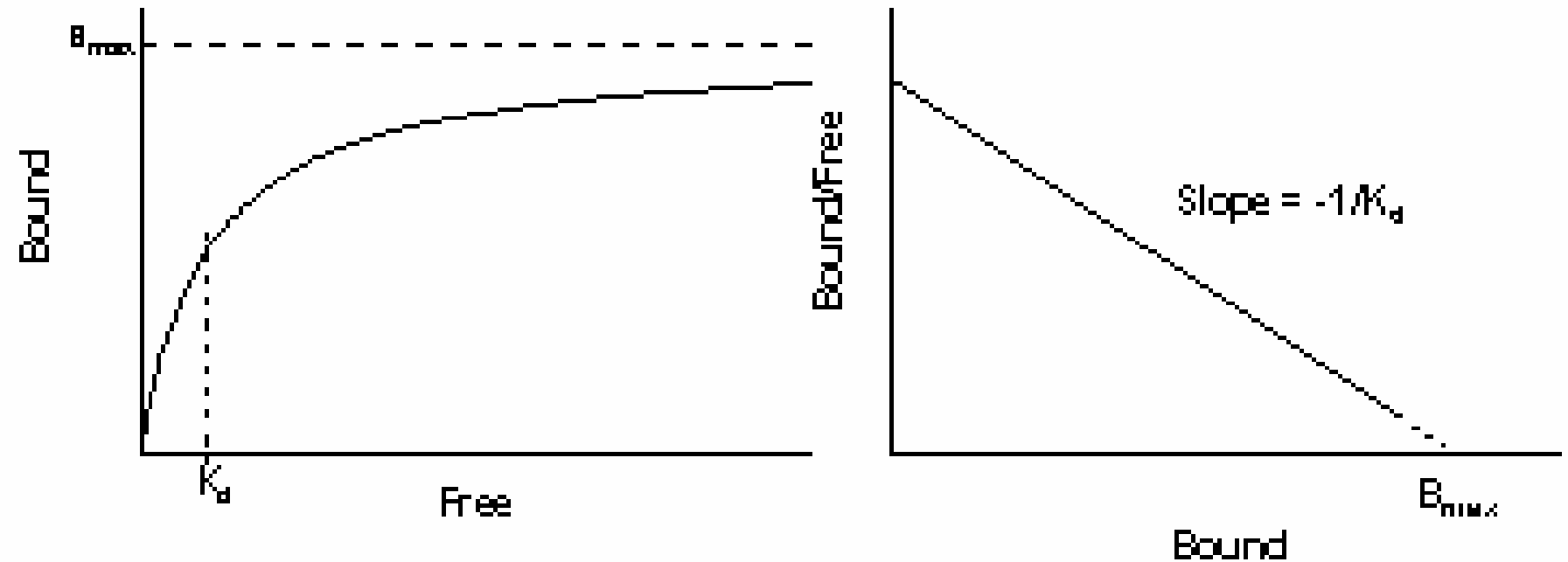
$$\frac{E}{E_{\max}} = \frac{[A]^{nH}}{[A]^{nH} + [A]_{50}^{nH}}.$$

Lei da Ação das Massas (Clark,1926)



modelo chave fechadura

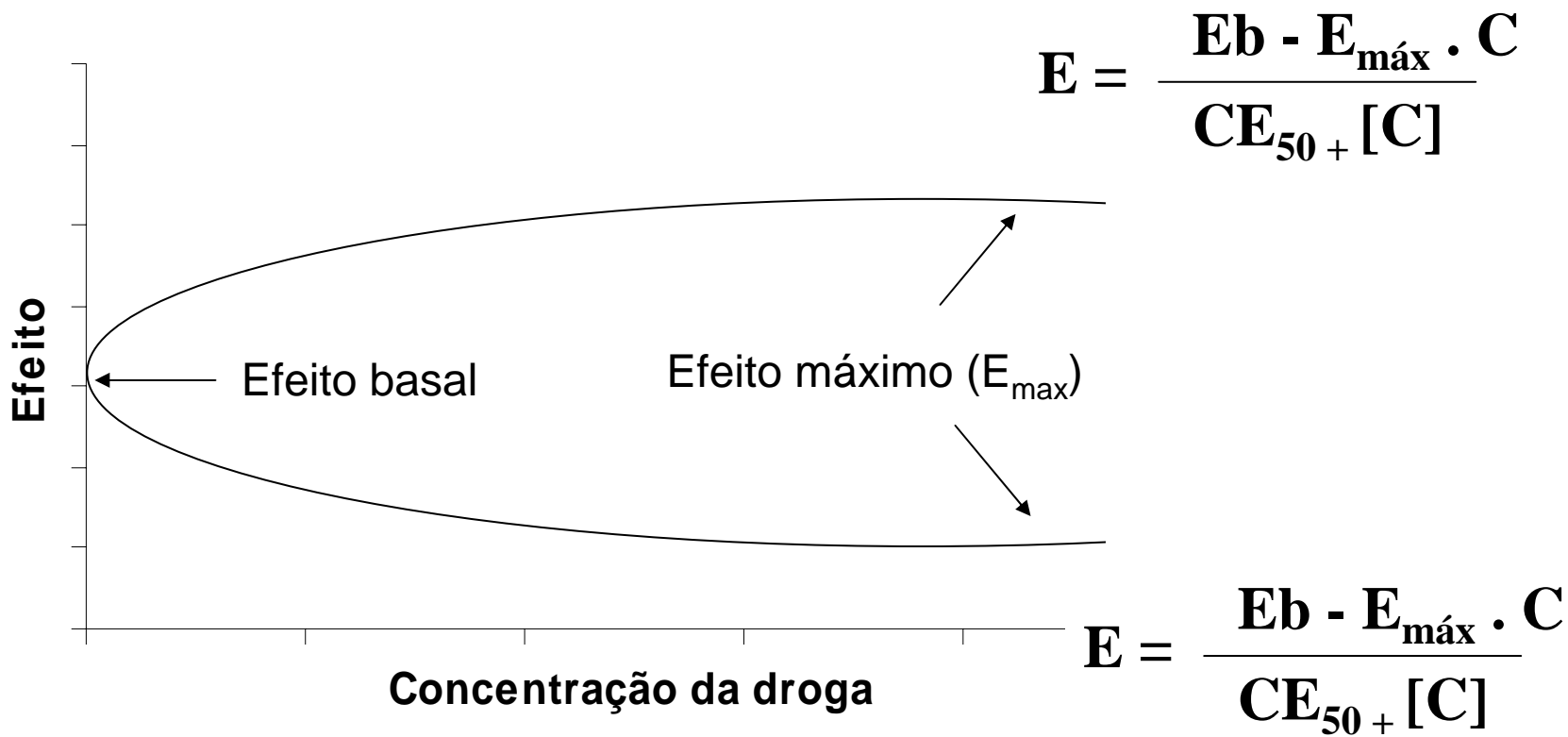
Modelo do Efeito Máximo



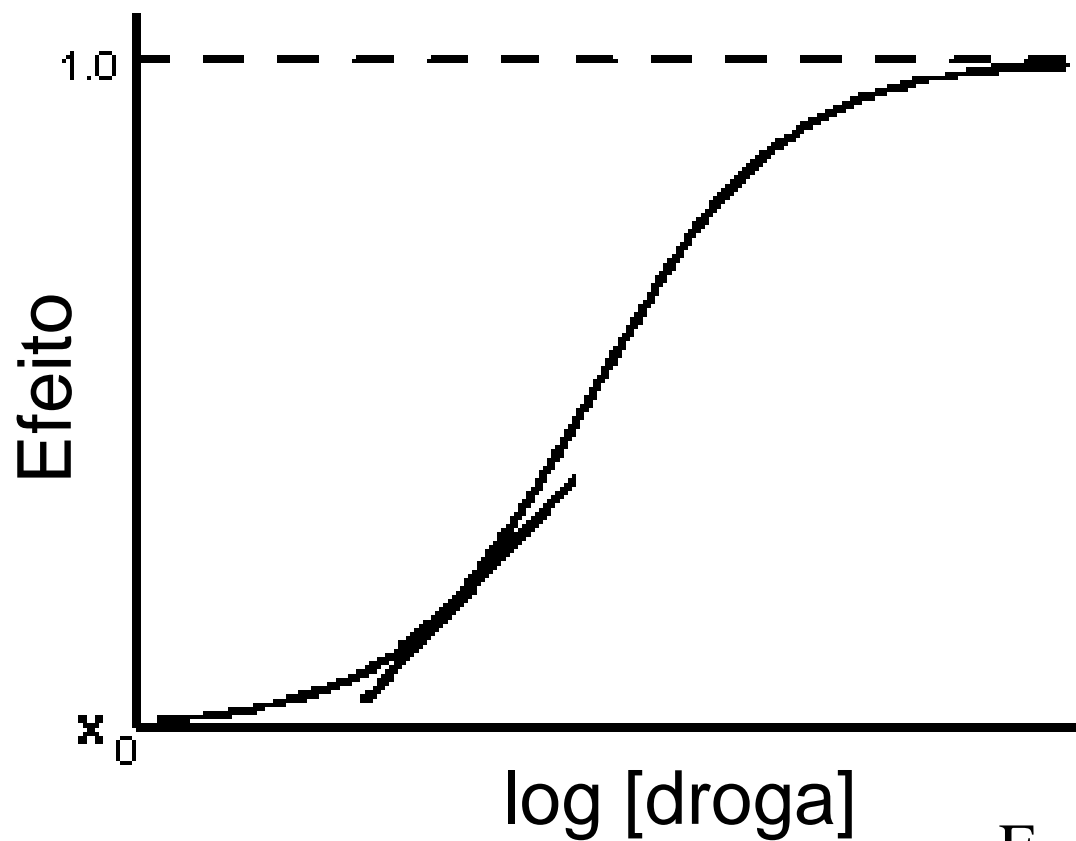
$$E = \frac{[C] \cdot E_{max}}{CE_{50} + [C]}$$

$$r = \frac{[L]}{K_d + [L]}$$

$$E = m \times C + E_0$$

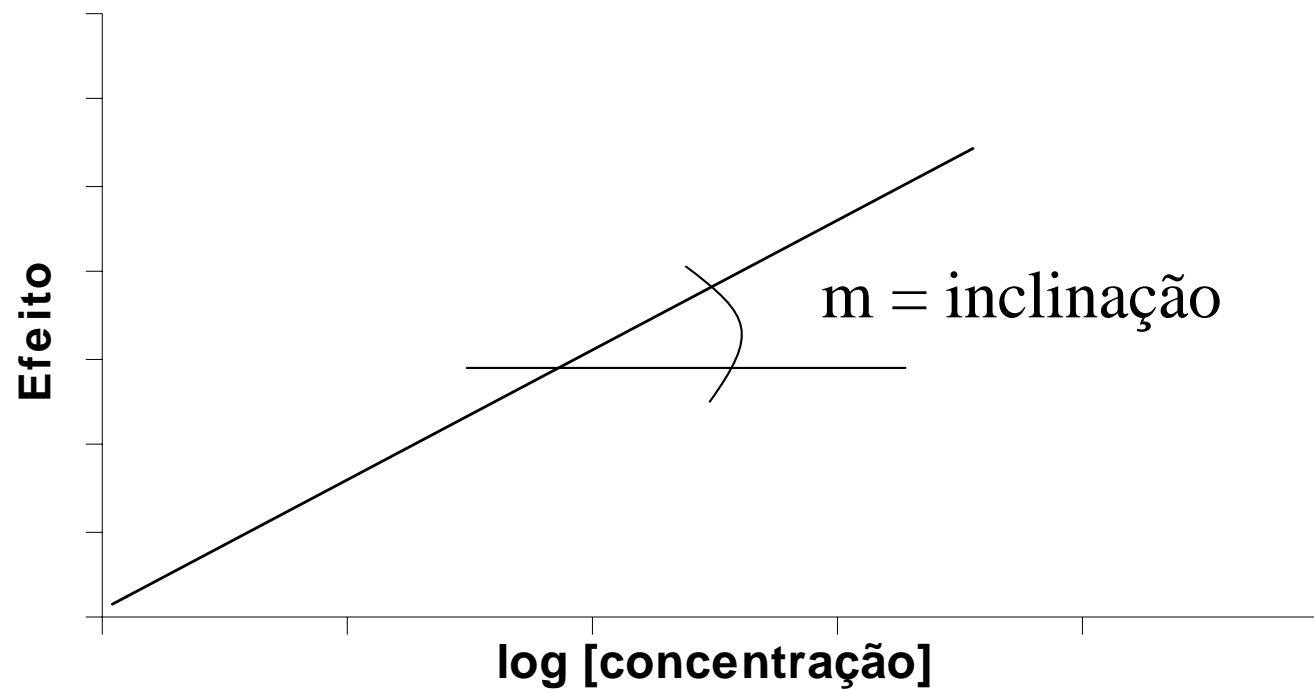


Log - Sigmoidal



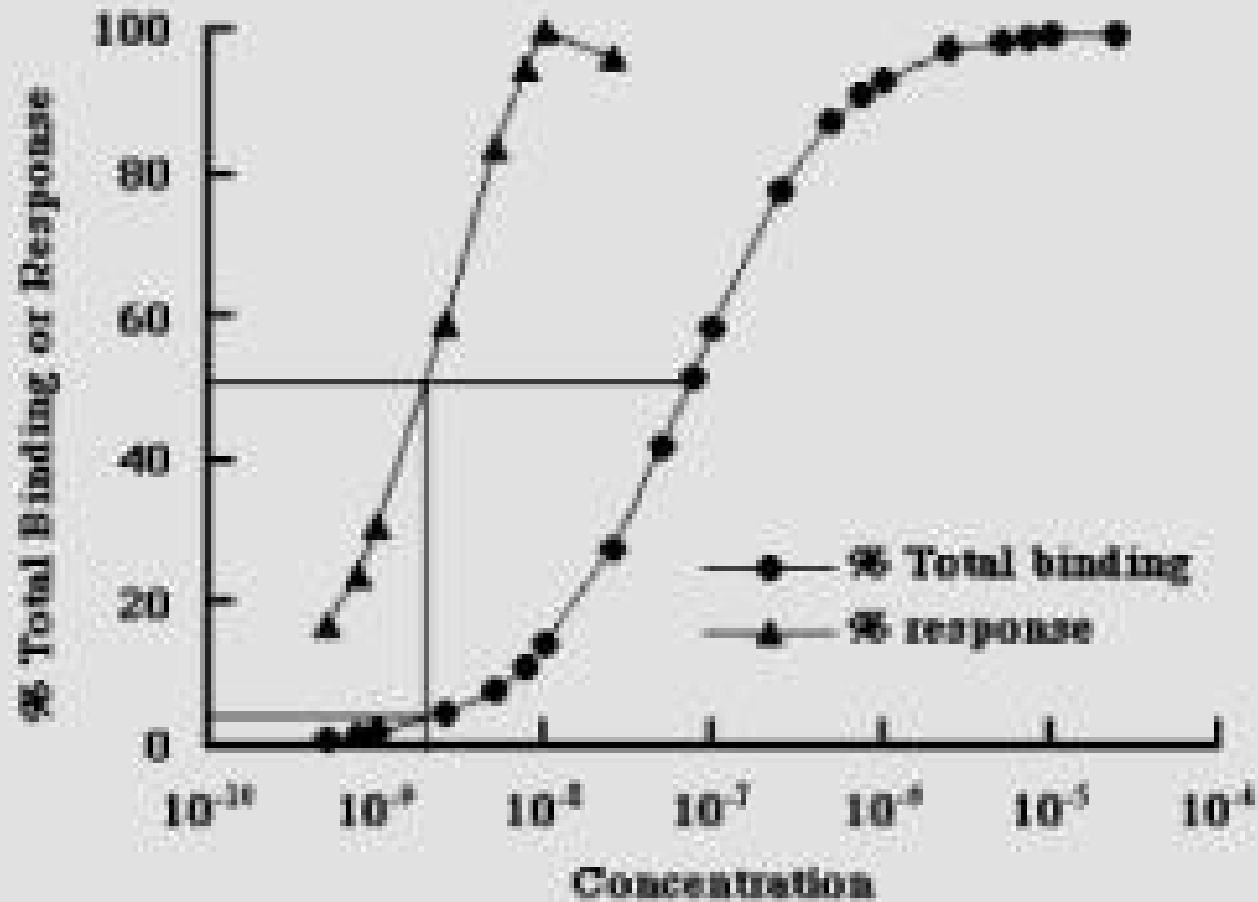
$$E = m \times \log C + b$$

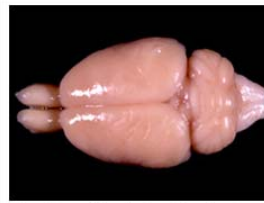
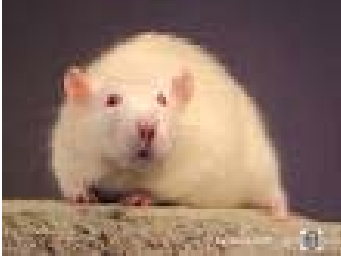
$$\text{Log } C = \frac{E - b}{M}$$



$$E = m \times \log C + b$$

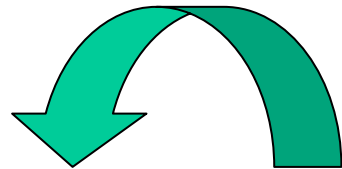
SPARE RECEPTORS





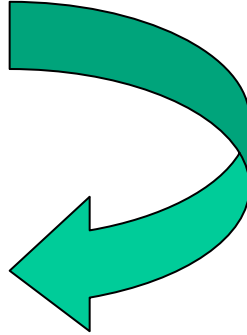
Dorsal view of the whole adult rat brain.
Olfactory bulbs on left.

→ Estruturas de interesse



Centrifugação
900 g, 10 min, 4 °C

Homogeneização
10 vol. sacarose 0,32 M



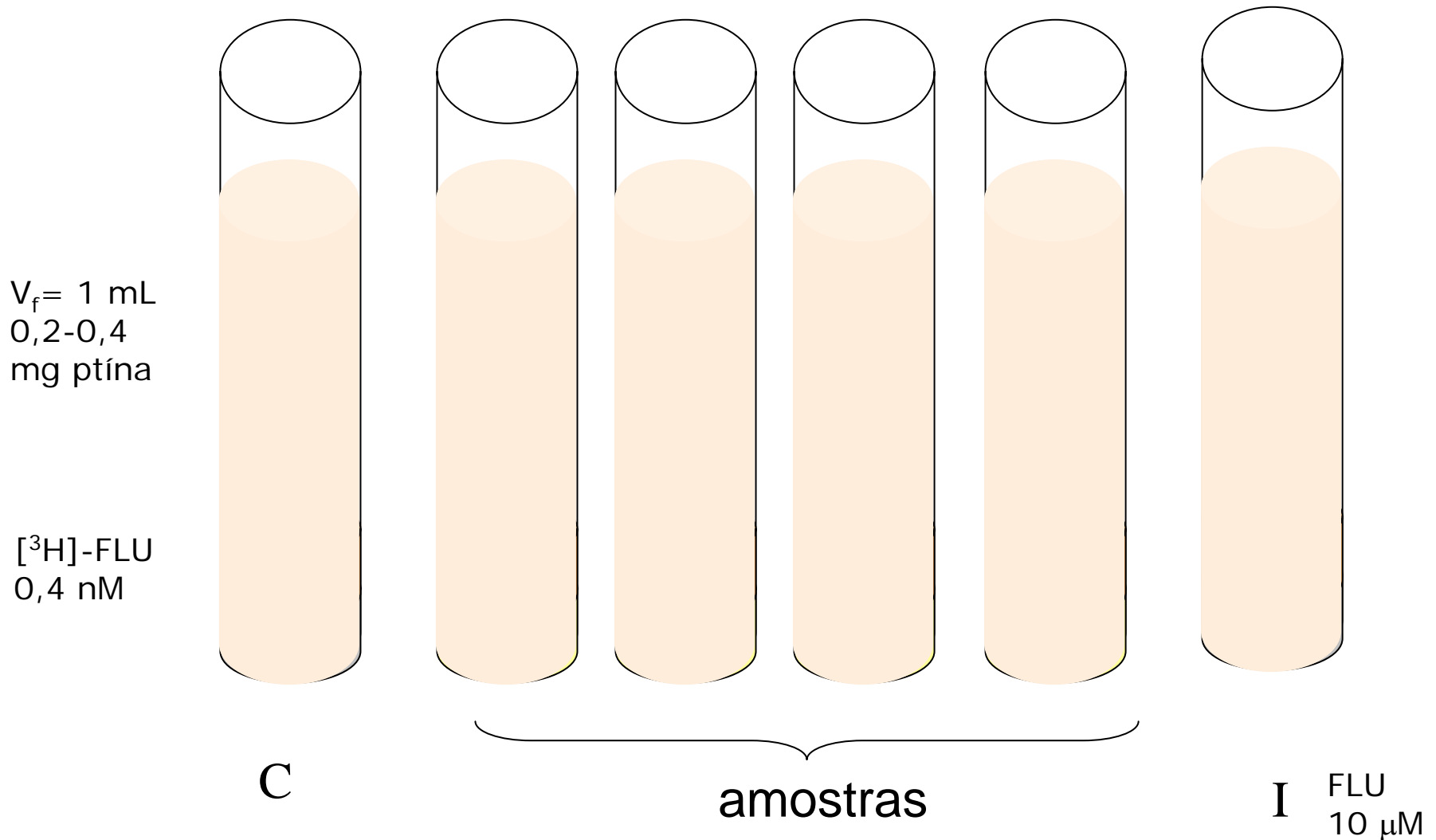
Ultracentrifugação
30000 g, 30 min, 4 °C

Descarte

Descarte

PREPARADO DE
MEMBRANAS

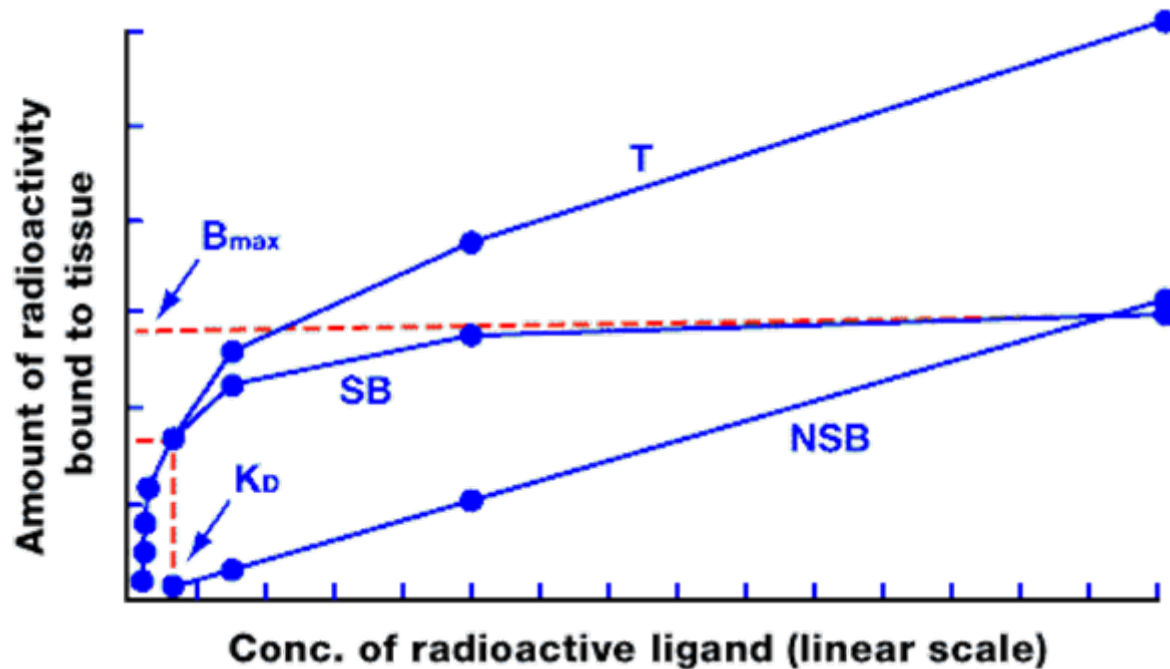
Binding [^3H]-flunitrazepam





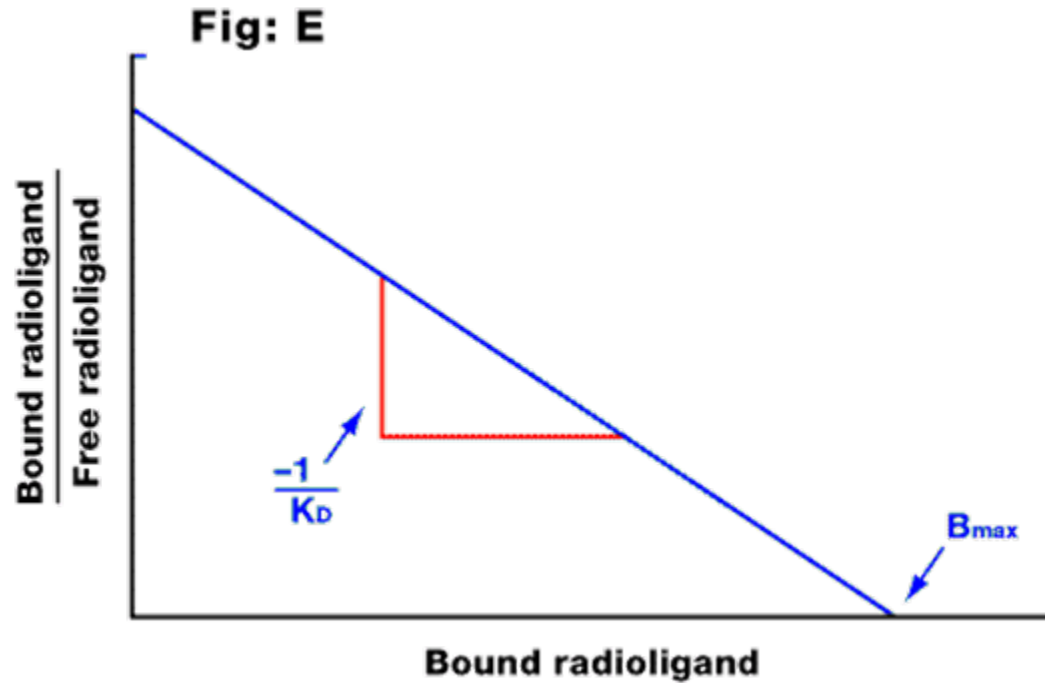


Curvas de saturação



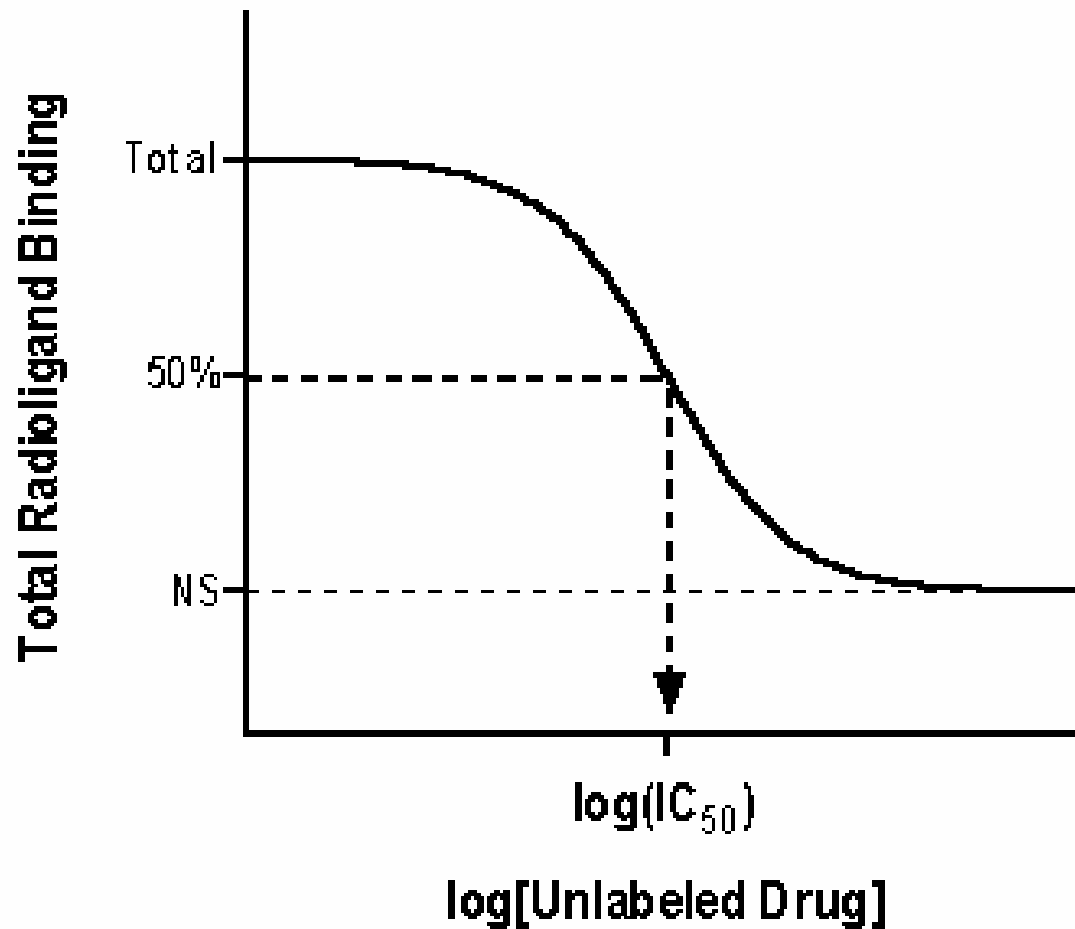
Saturation curve for a ligand binding to a homogeneous receptor population. The total binding (T) includes a component of non-specific binding (NSB), which is non-saturable, and the remainder is specific binding (SB) which saturates at B_{max} . Note that if the x-axis were logarithmic, the SB curve would be sigmoidal (compare with the log-concentration - response curve). The K_D of the ligand is the concentration which occupies 50% of the receptors, and can be calculated from a Scatchard plot.

Scatchard Plot

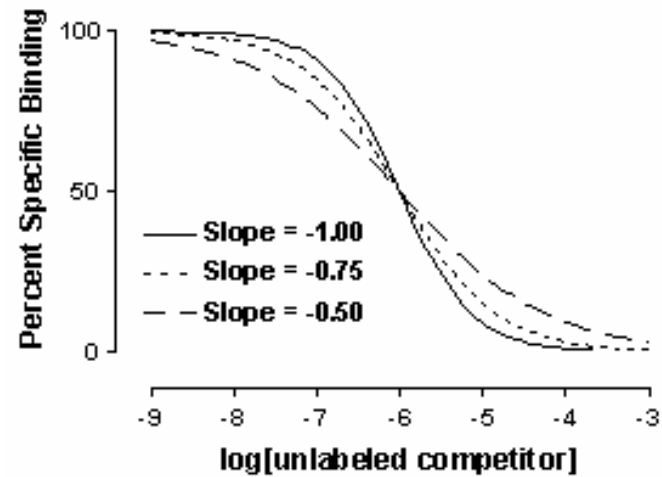
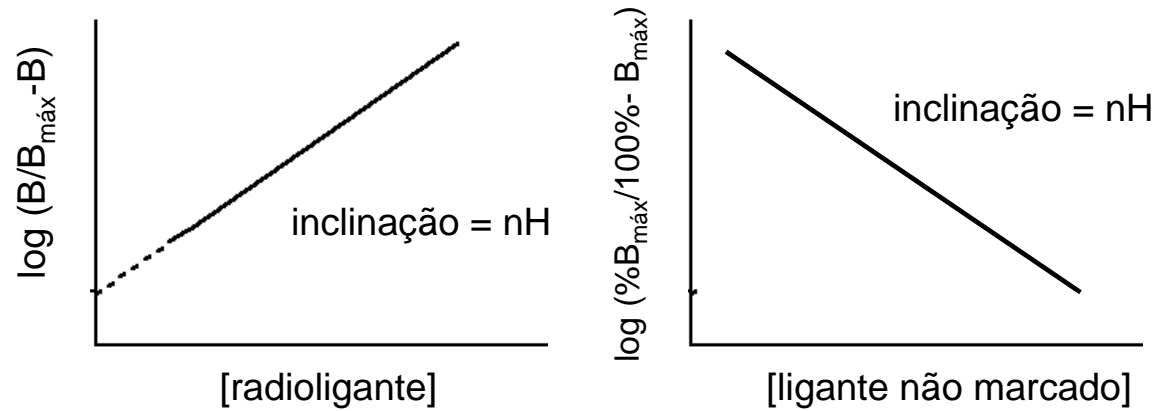


Scatchard plot of the saturable component of the data in the previous figure. The intercept on the x axis is equal to the B_{\max} ; the slope is equal to $-1/K_D$.

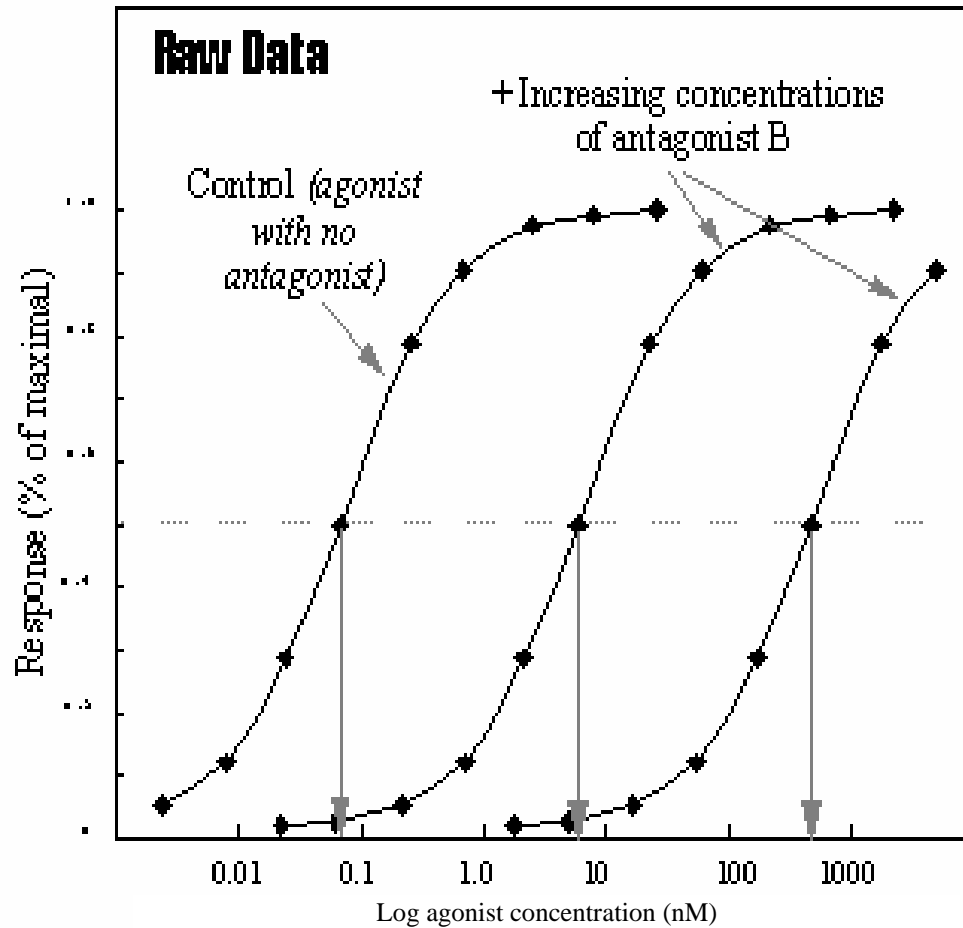
Curvas de Deslocamento

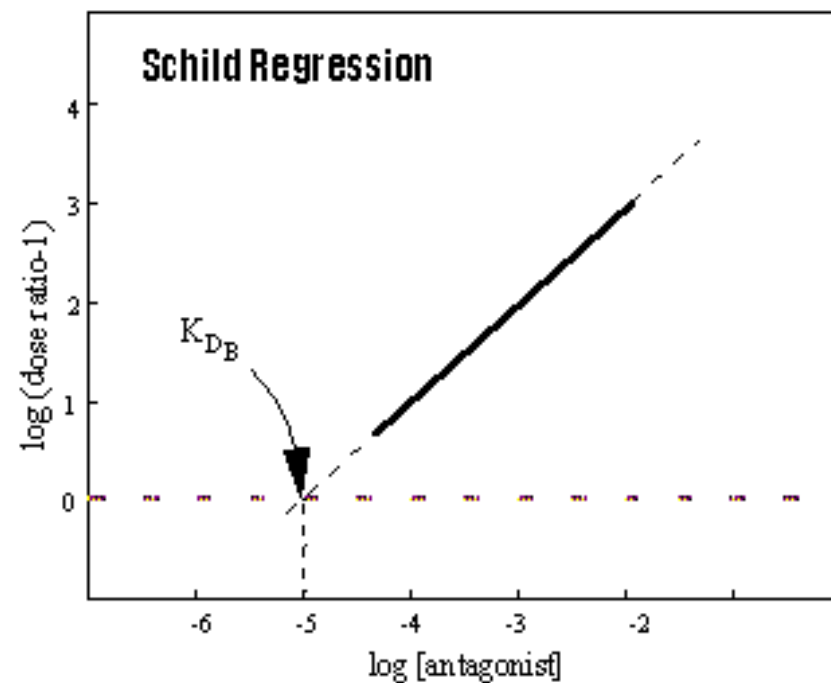
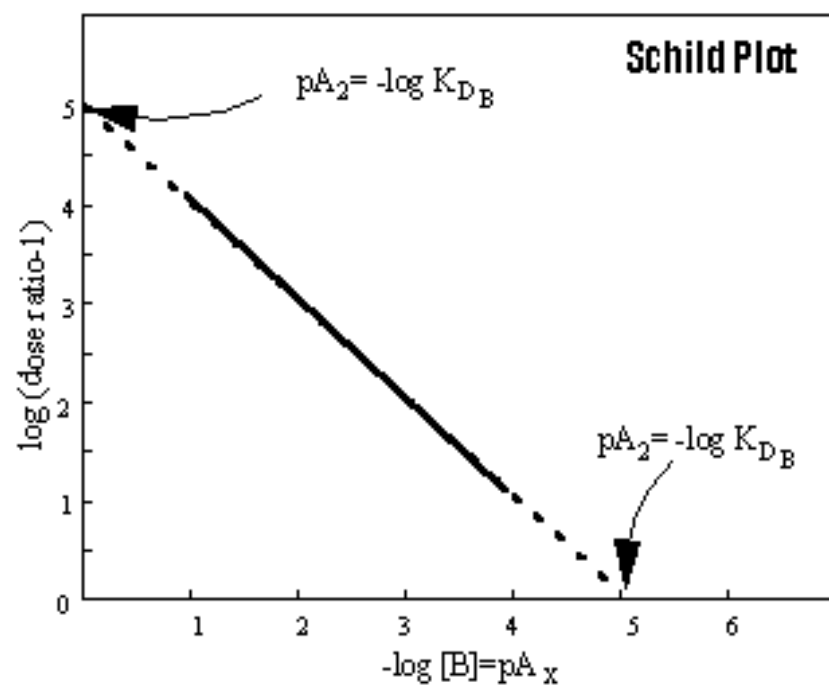


Plot de Hill

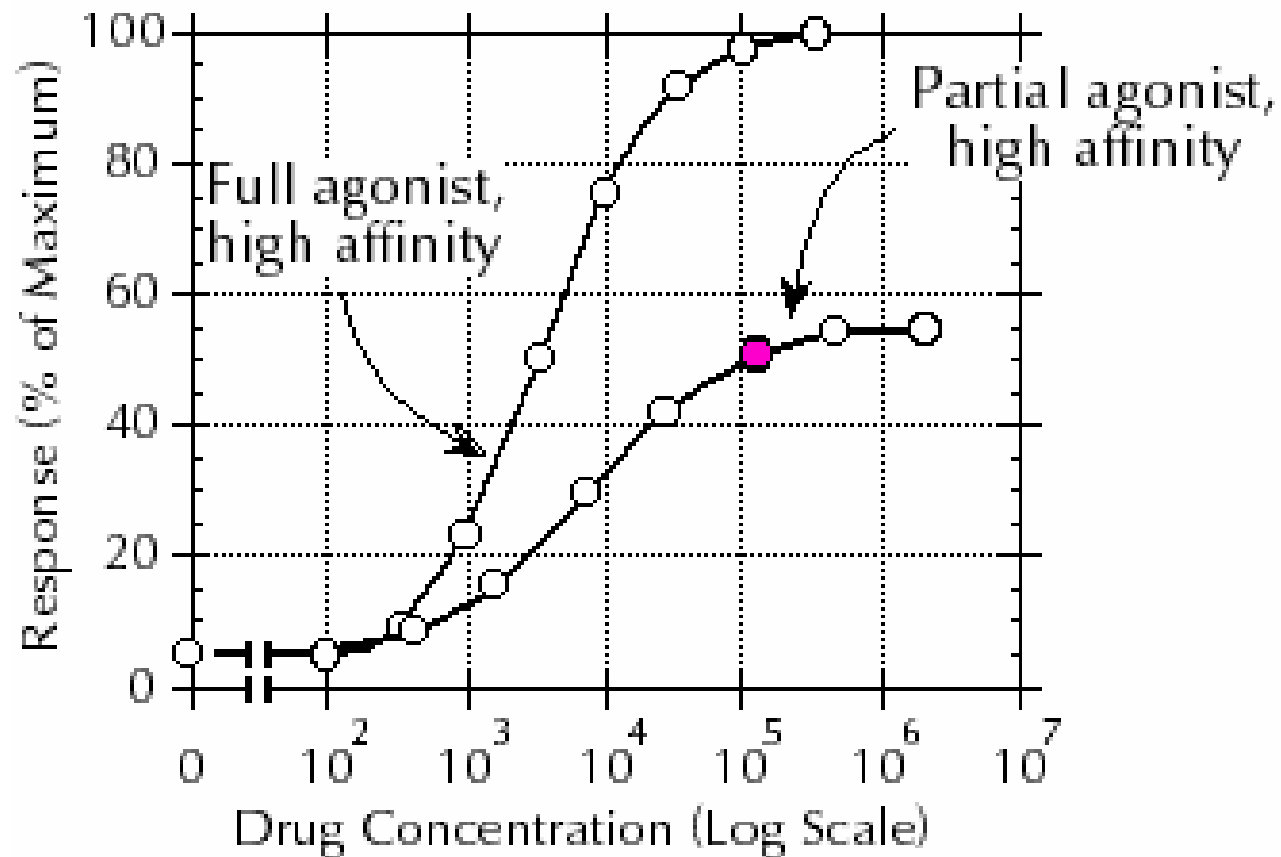


Antagonistas

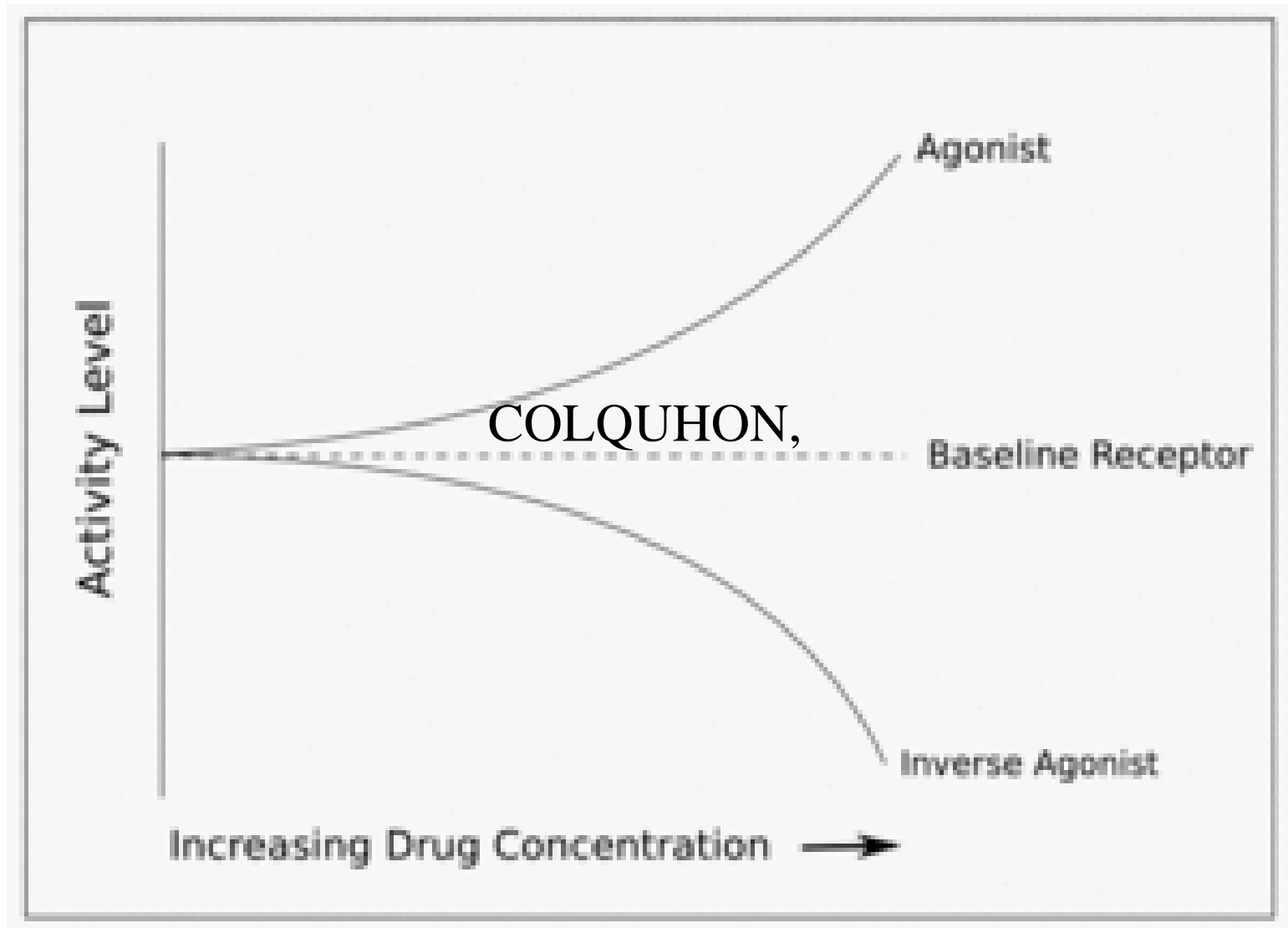


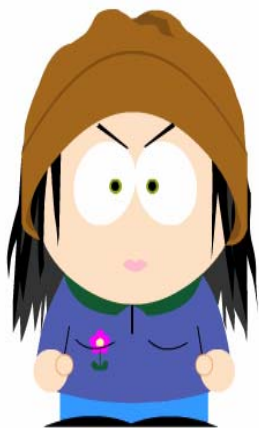


Agonistas parciais



Agonistas inversos





Gilda Neves
(doutorado)



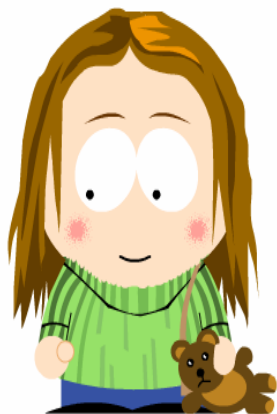
Scheila Valério
(BIC)



Gustavo Proença
(mestrado)



Camila Boque
(BIC)



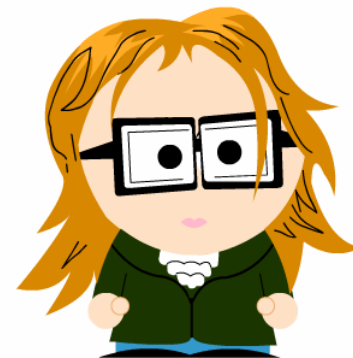
Andresa Betti
(BIC)



Raquel Fenner
(doutorado)



Alice Viana
(doutorado)



Mariana Pranke
(BIC)