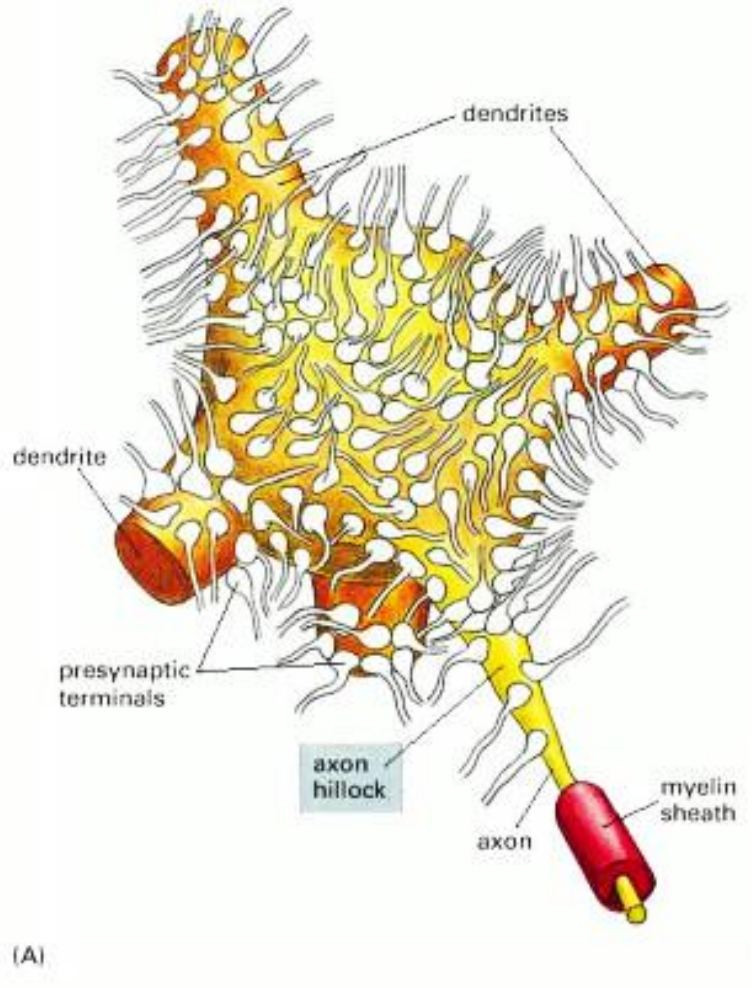
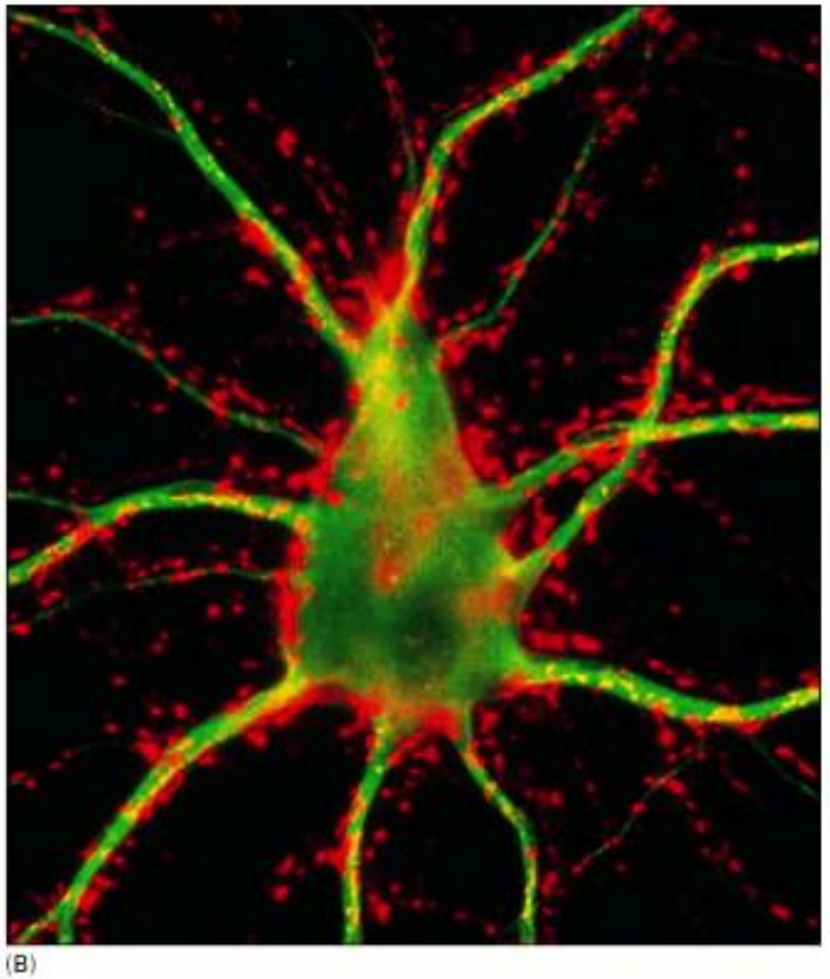
Las células del sistema nervioso II

Sinapsis
Diferenciación neuronal

Flavio Zolessi

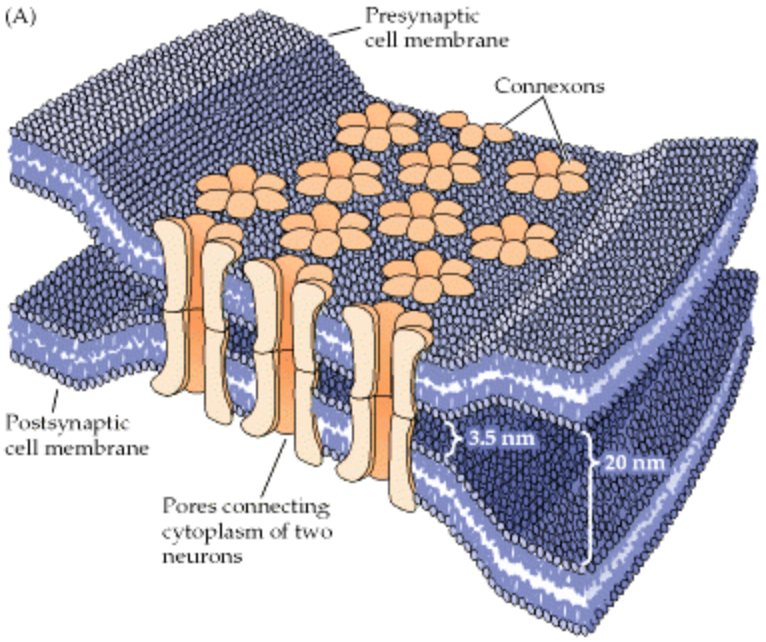
Sinapsis

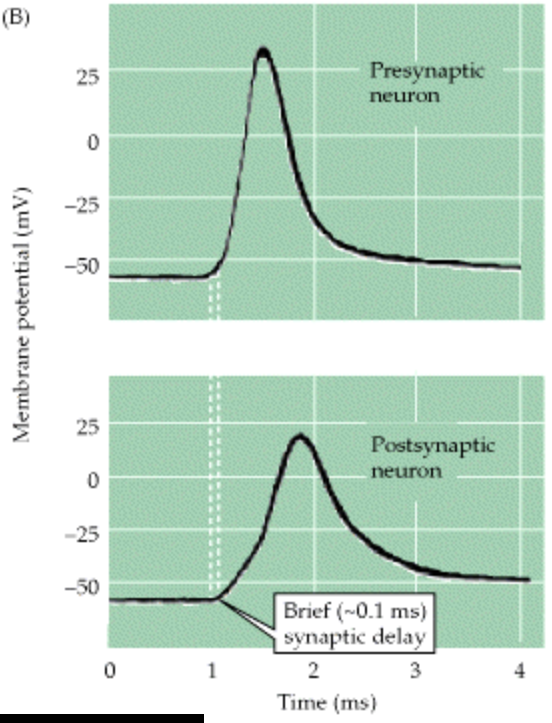


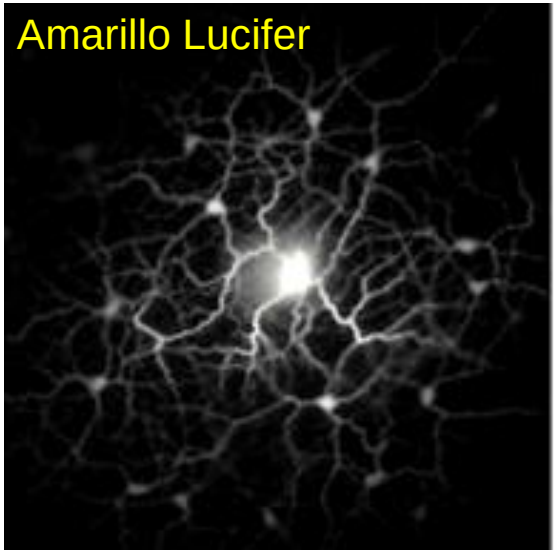


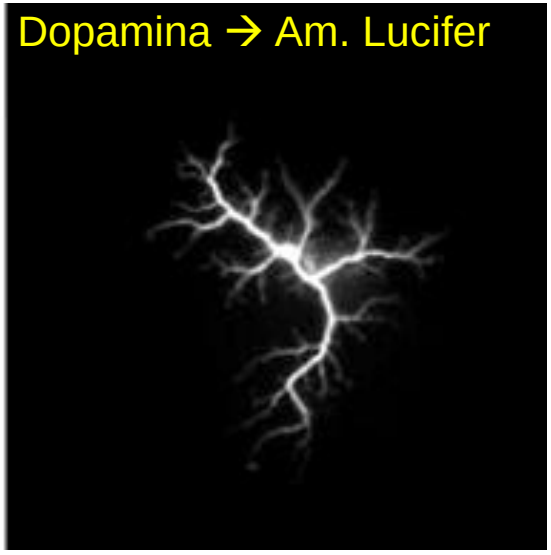
10^{11} neuronas ---------- 10^{14} sinapsis!!

Sinapsis eléctrica

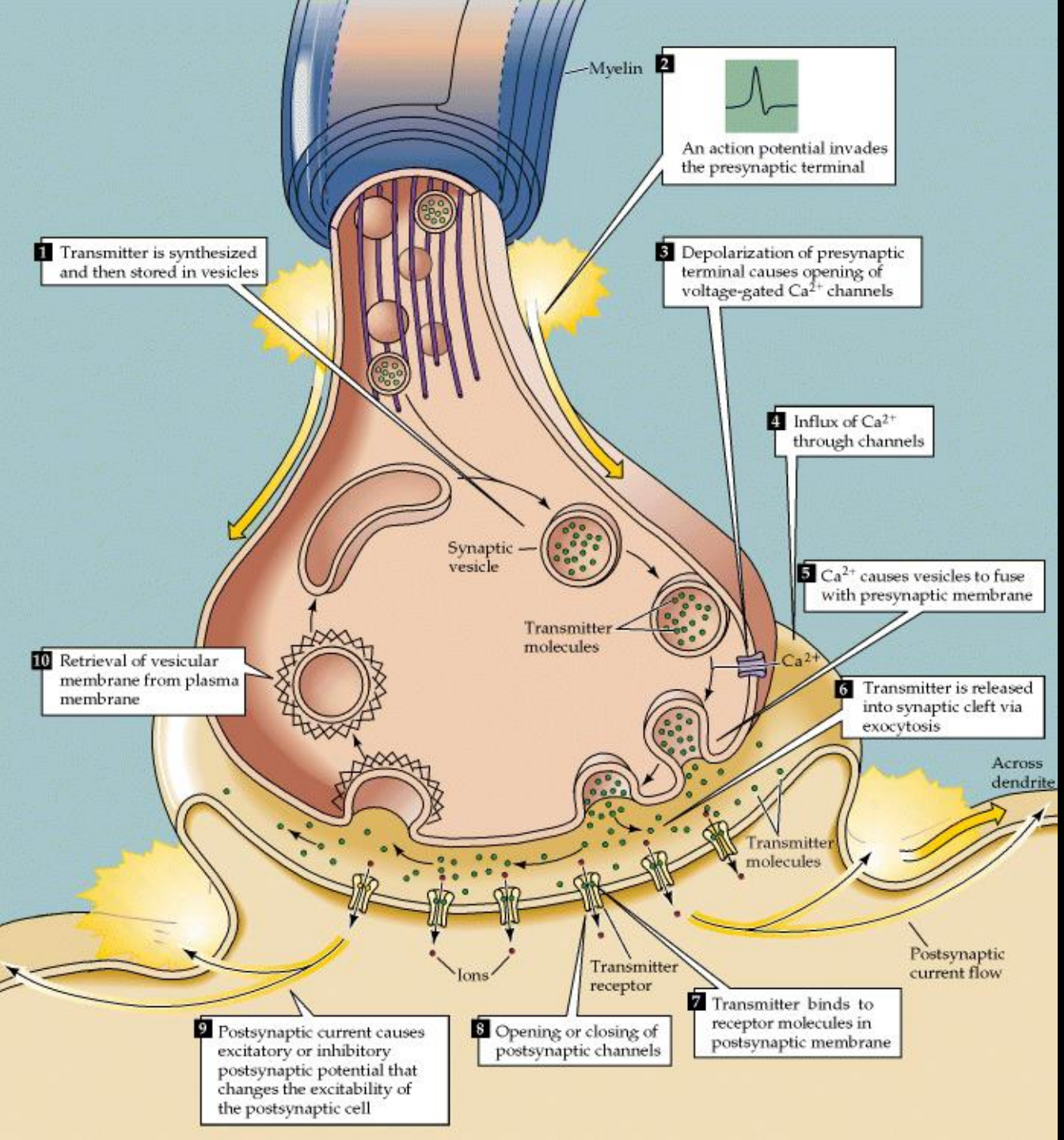






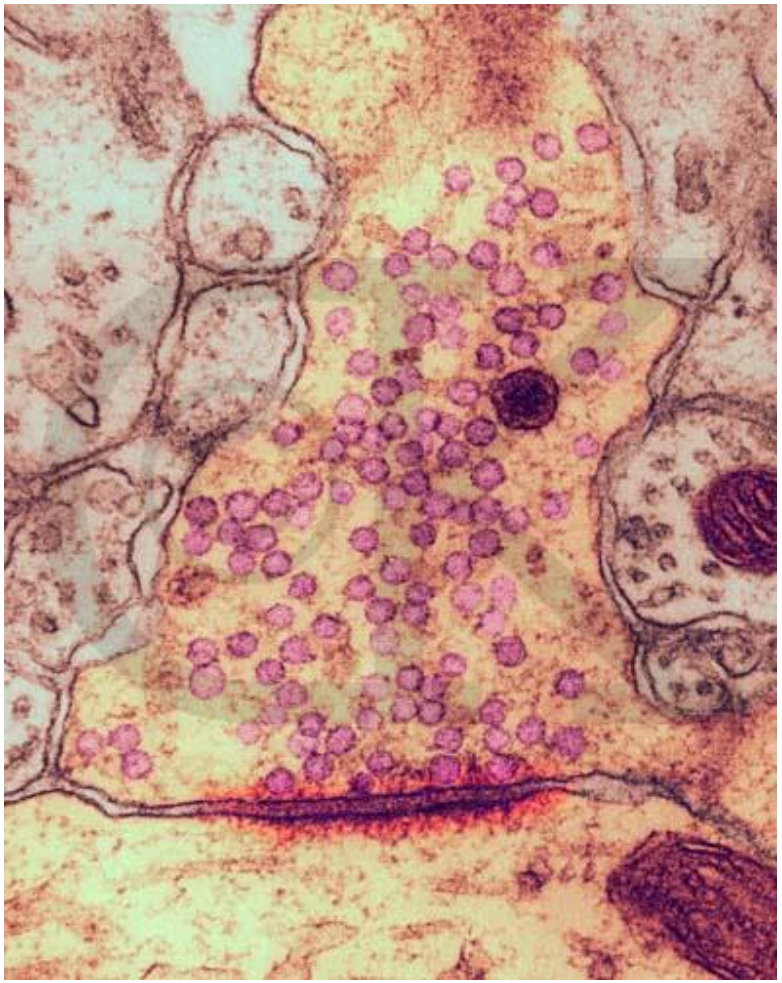


Sinapsis química

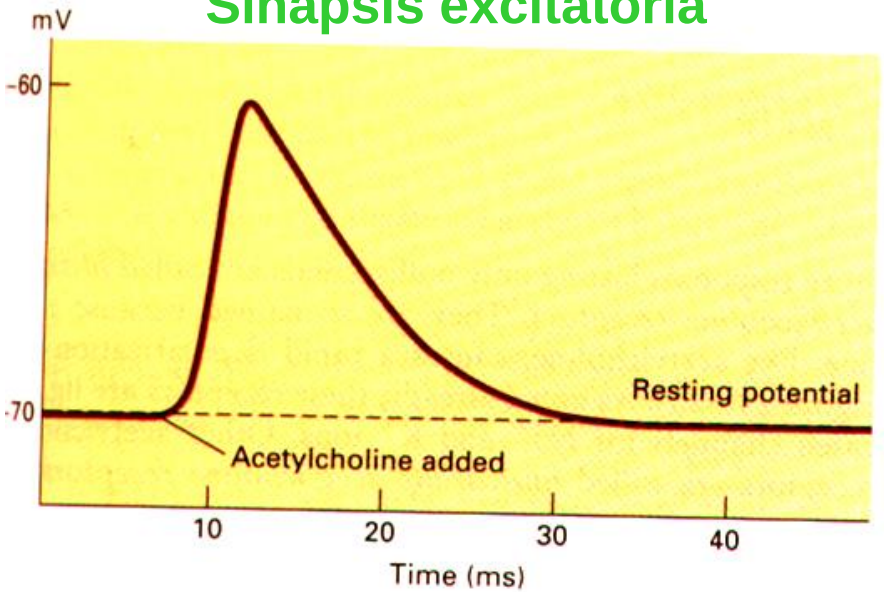


https://youtu.be/4rZMLIZsIb0

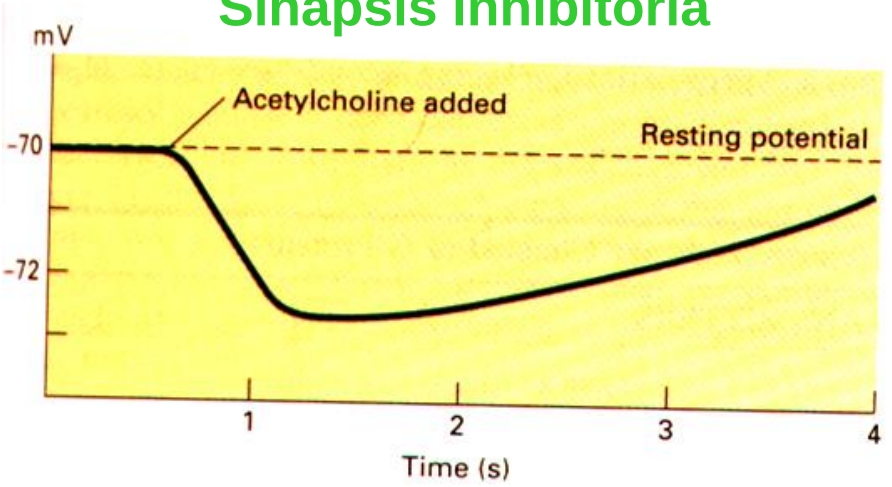
Sinapsis química



Sinapsis excitatoria



Sinapsis inhibitoria



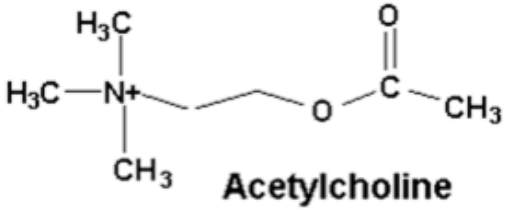
Sinapsis química : Neurotrasmisores y receptores

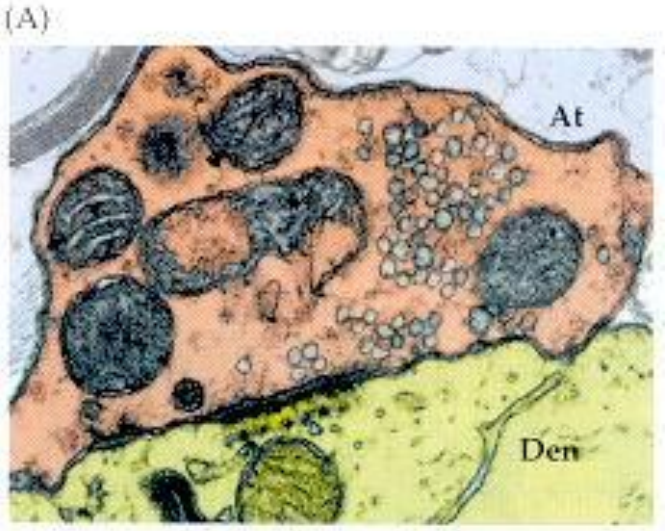
NEUROTRASMISORES

Moléculas pequeñas:

- Acetilcolina
- Serotonina
- Dopamina
- Glutamato
- GABA

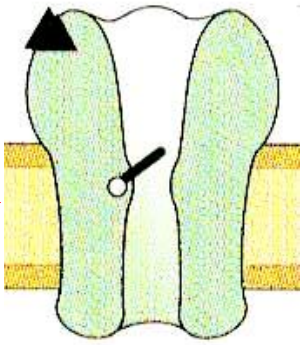
Neuropéptidos



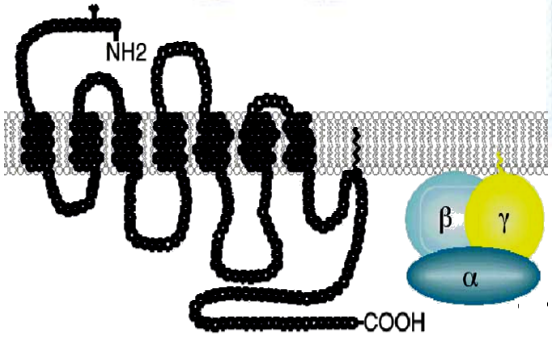


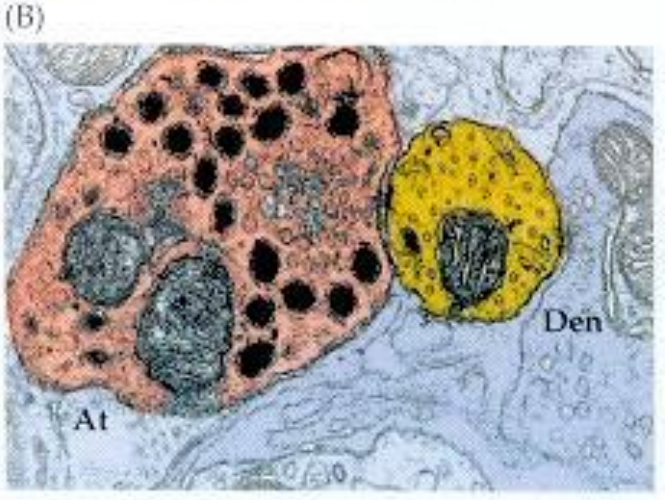
RECEPTORES

Ionotrópicos



Metabotrópicos





しびれ

https://youtu.be/st9iij98KpM

しびれ

=

“shibire”

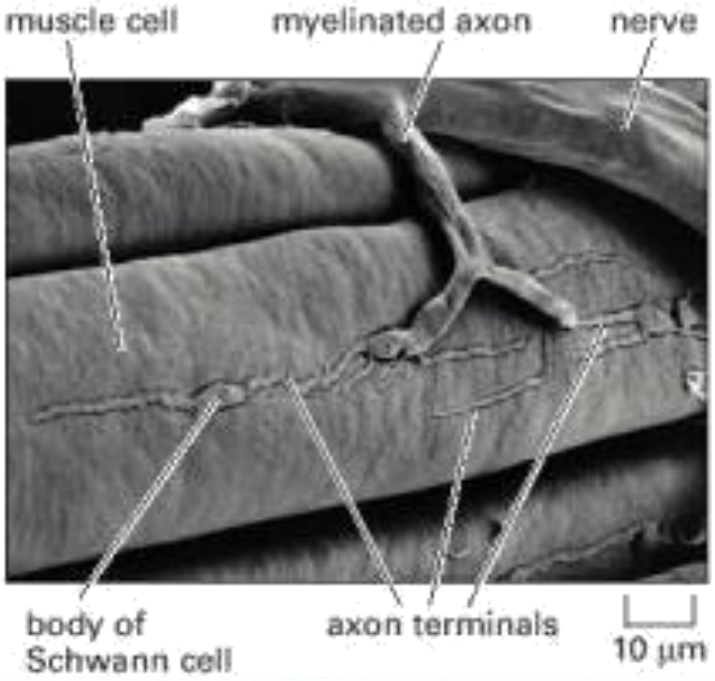
¿Qué les pasa a las moscas *shibire*?

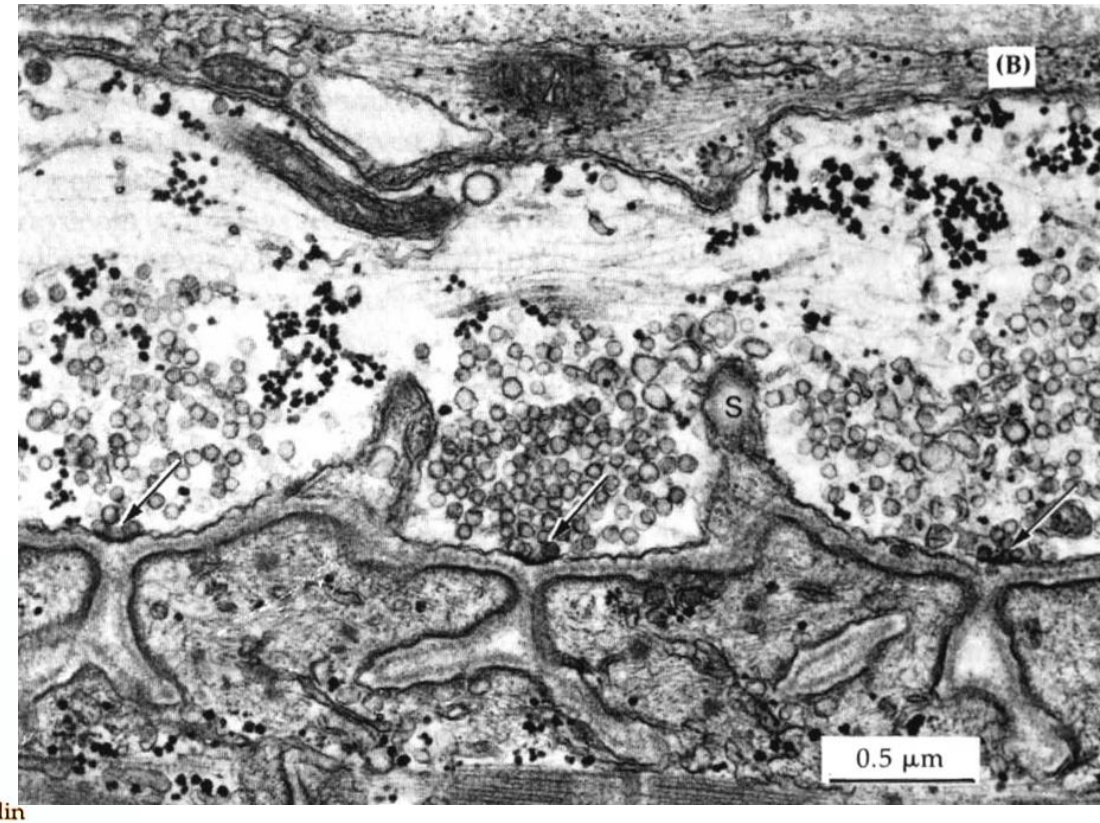
Grupo 1 - ¿Qué significa la palabra y qué función está fallando?
Grupo 2 - ¿Qué células están involucradas en el proceso?
Grupo 3 - ¿Qué mecanismo molecular está evidenciando?
Grupo 4 - ¿Por qué el efecto es reversible?

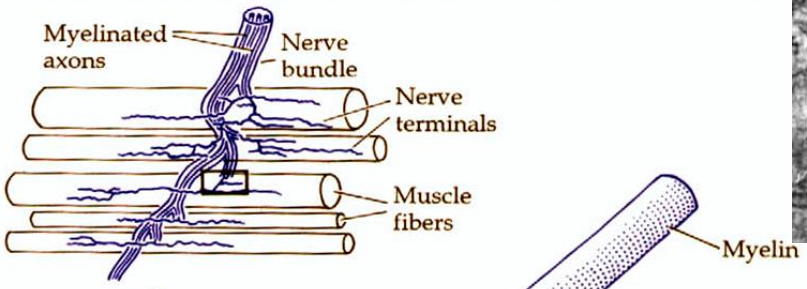
Unirse a la reunión Zoom
https://us04web.zoom.us/j/7413456826?pwd=dUdkdmVweGFLTlliUGNMZkE2R2h5Zz09

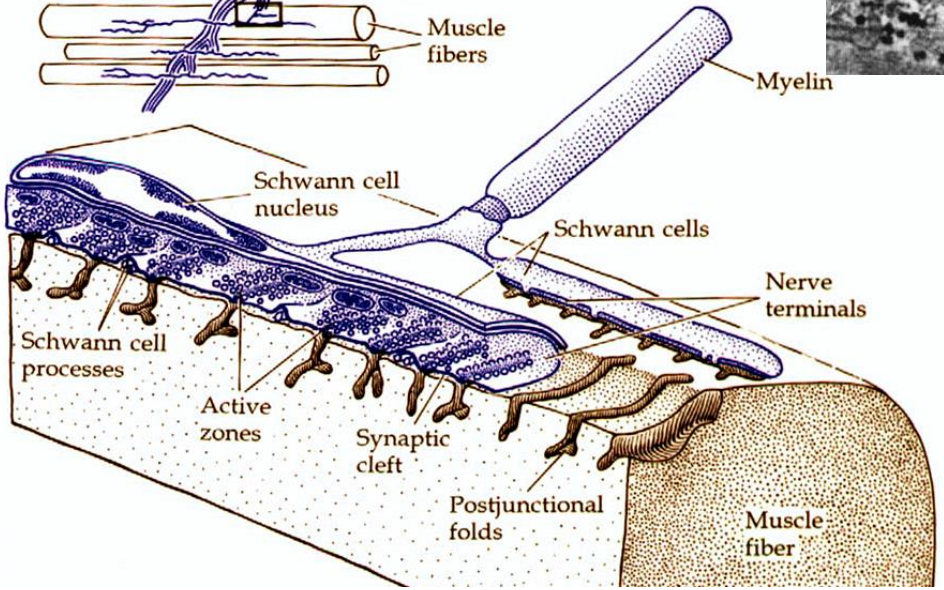
ID de reunión: 741 345 6826
Contraseña: neurona

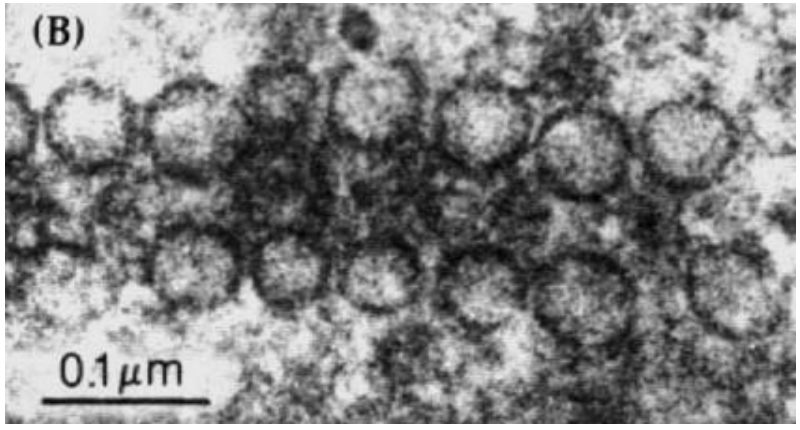
La sinapsis neuromuscular



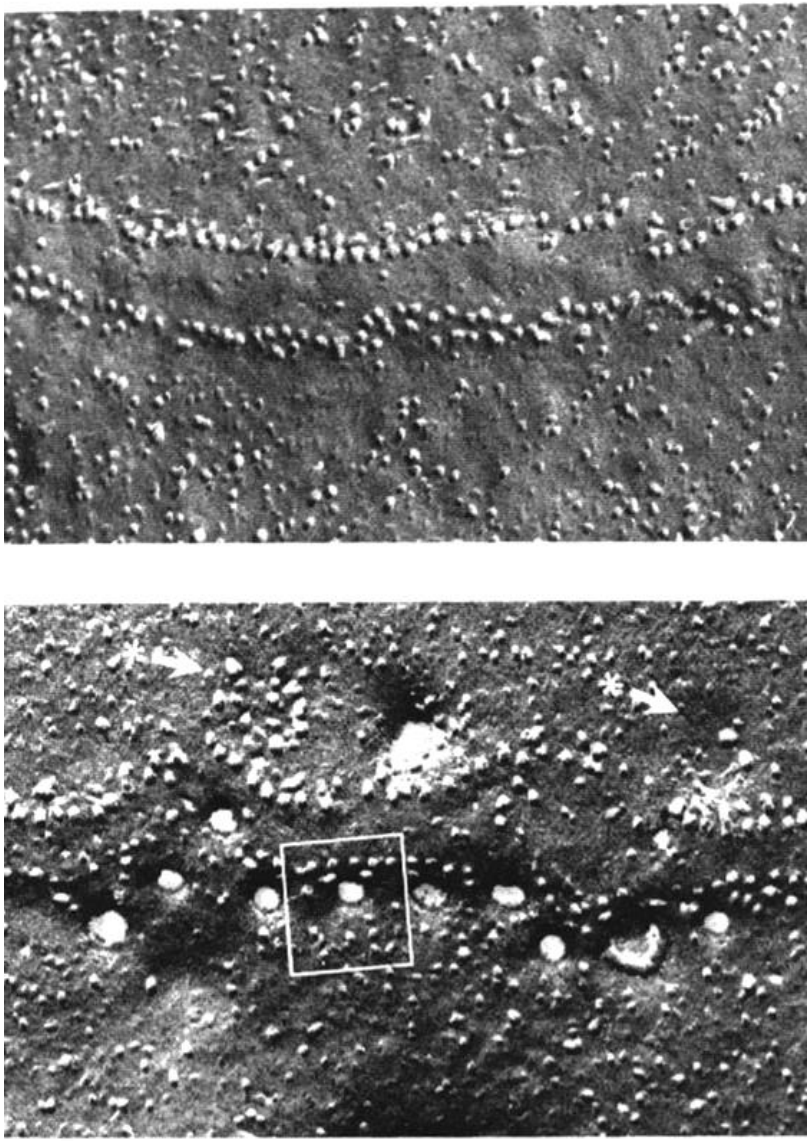




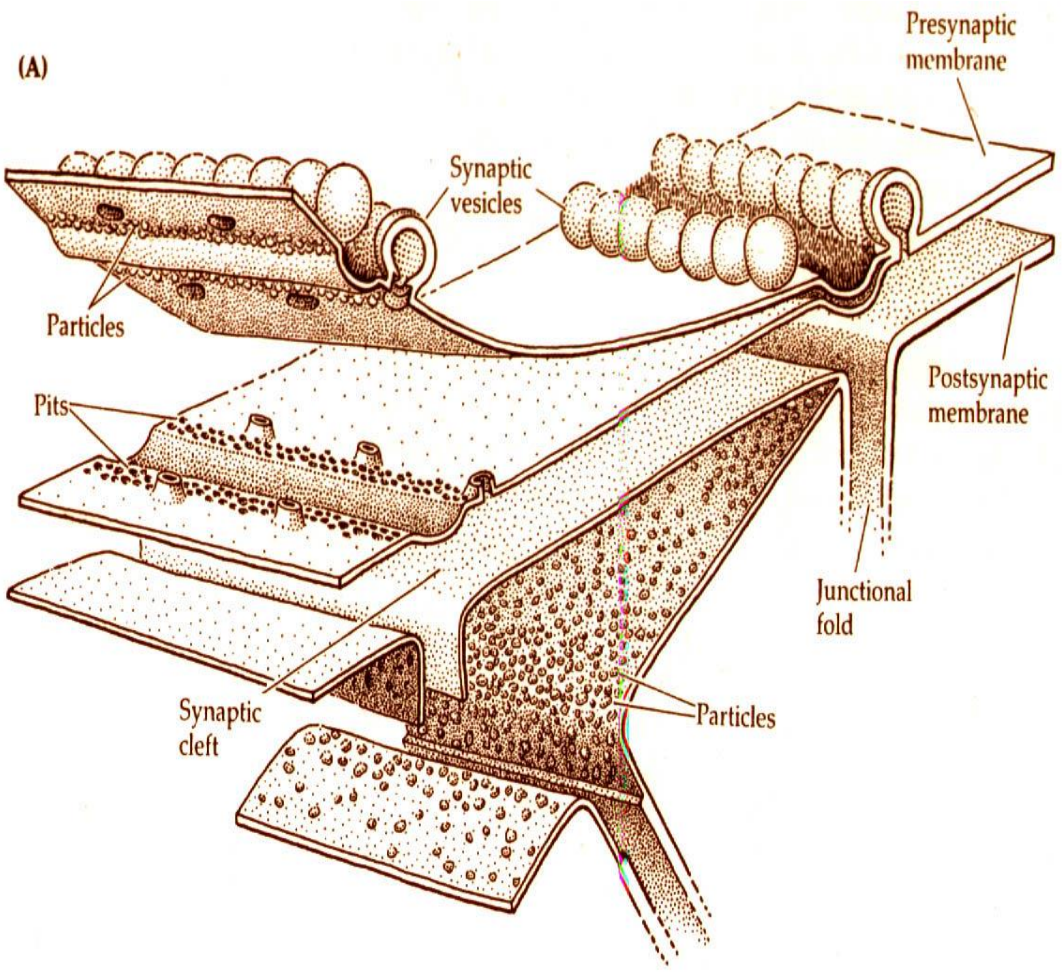




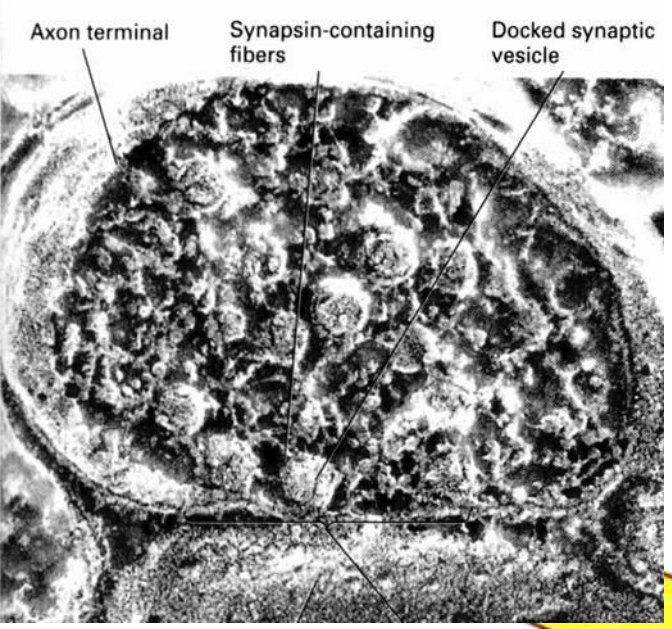
Las vesículas sinápticas y la liberación del neurotrasmisor

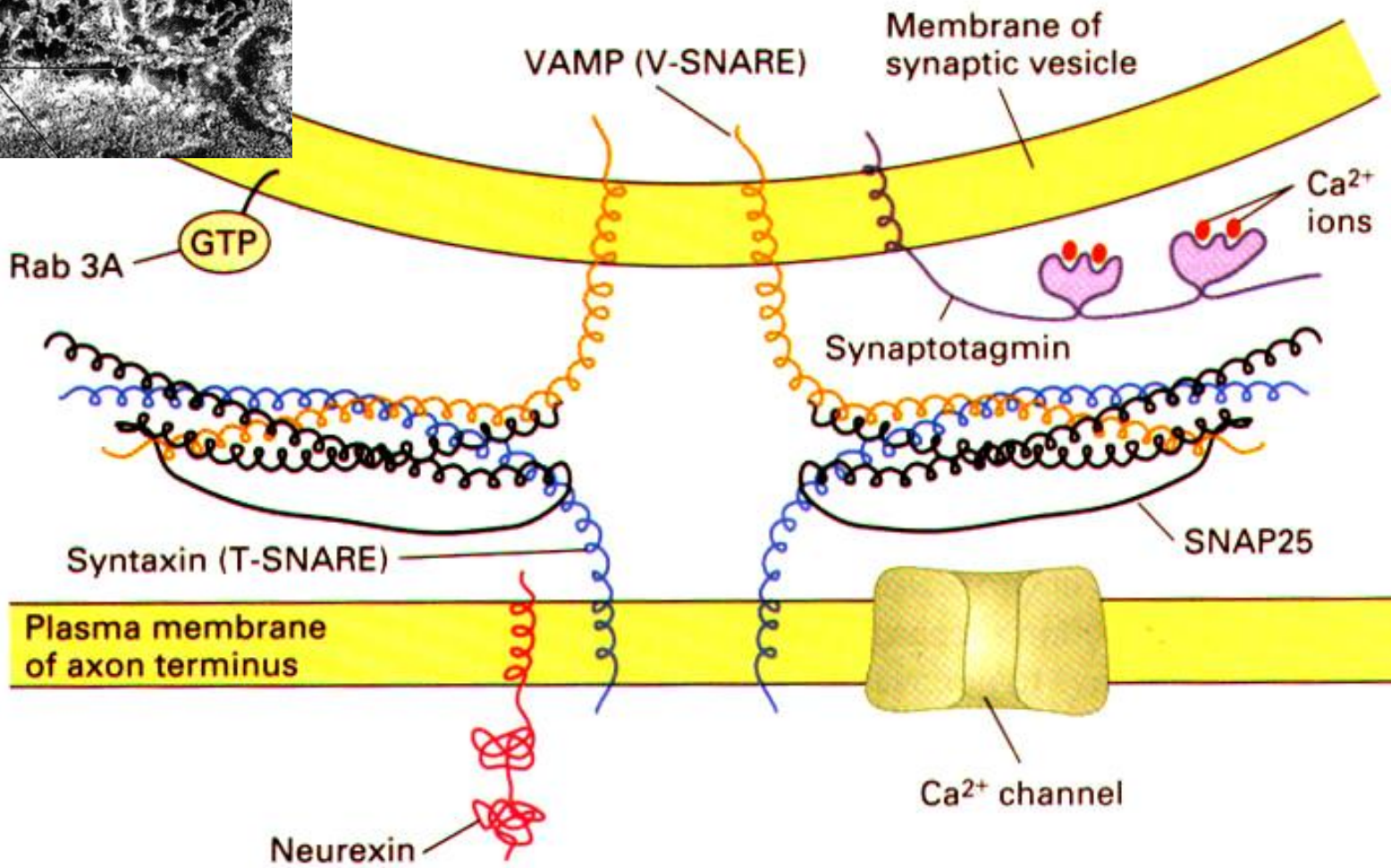


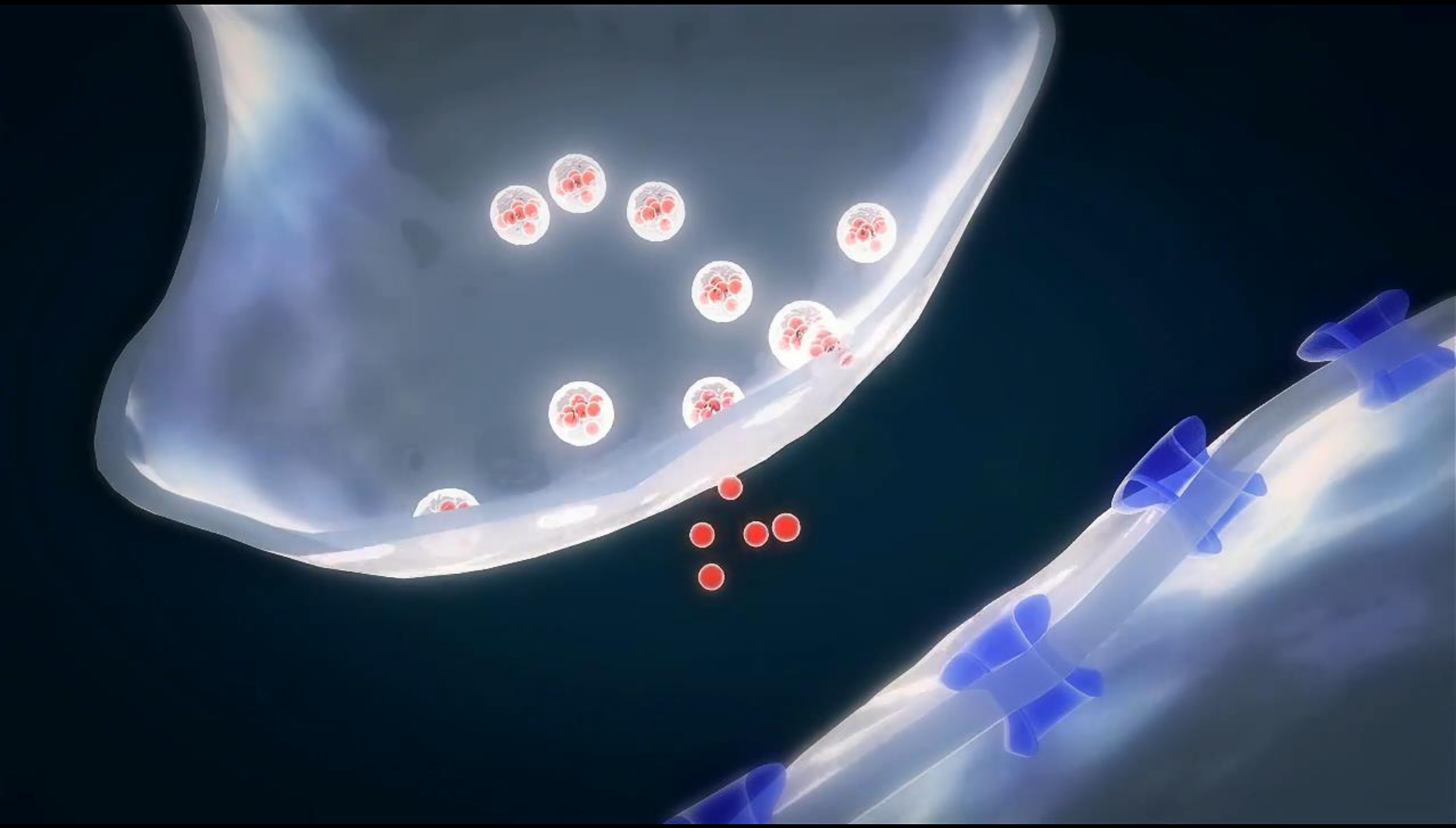
Heuser y Reese, 1989



Las vesículas sinápticas y la liberación del neurotrasmisor

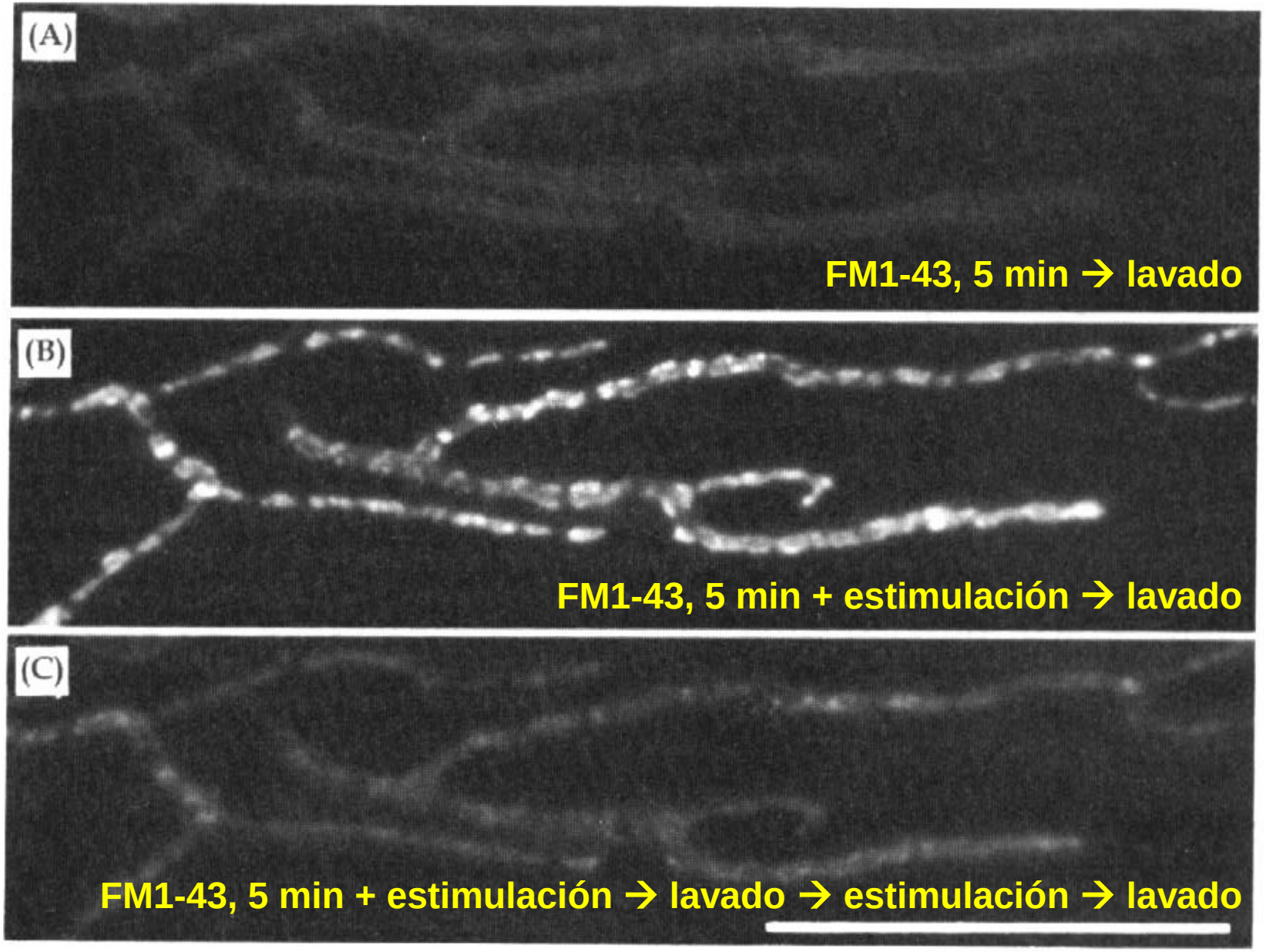




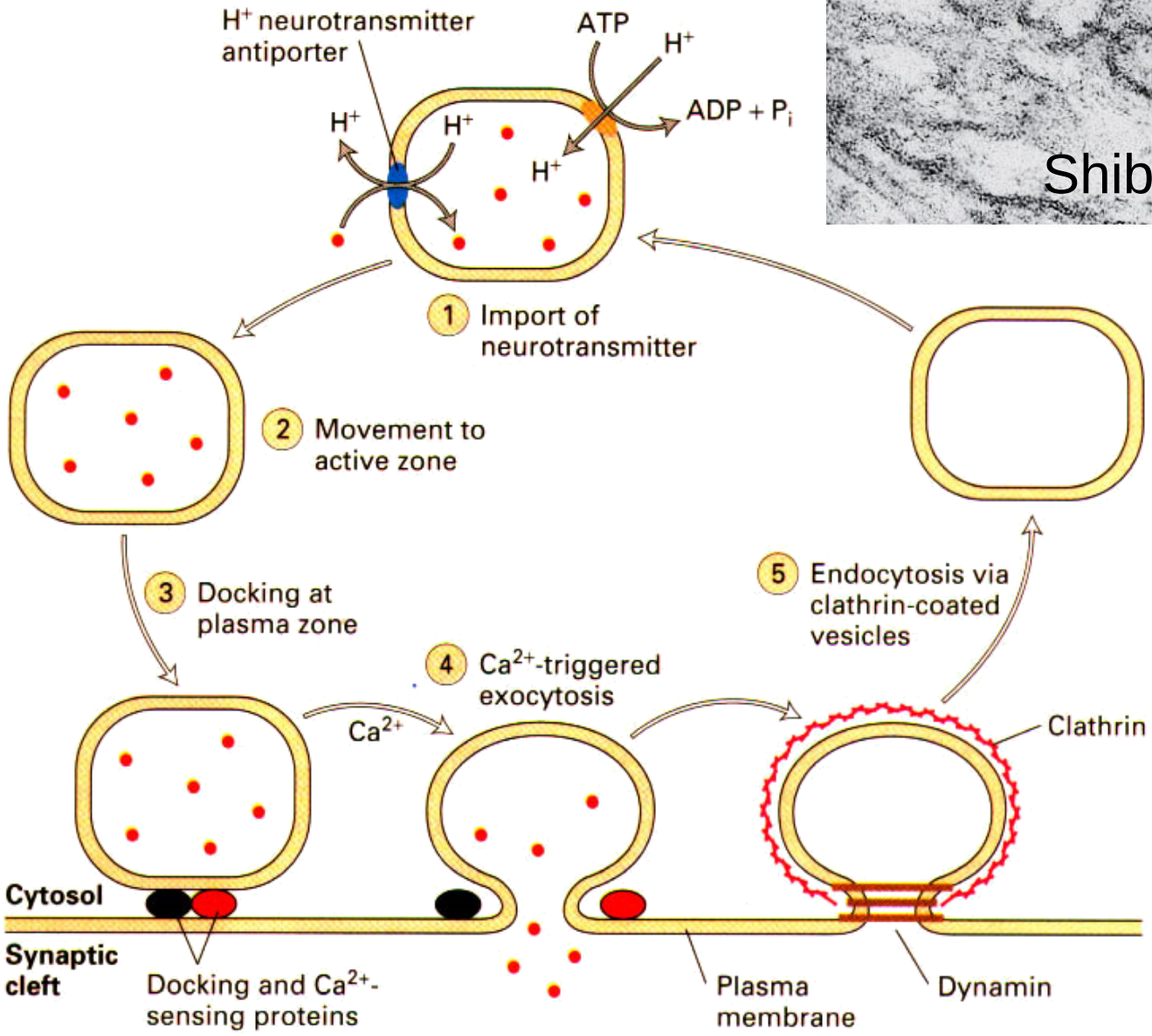


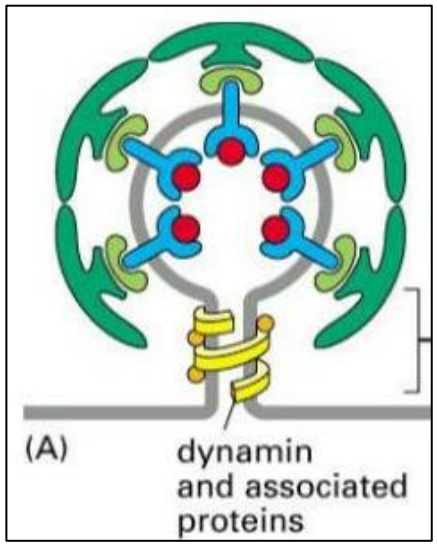
https://youtu.be/jQJAiPuqt4Q

Dinámica de las vesículas sinápticas

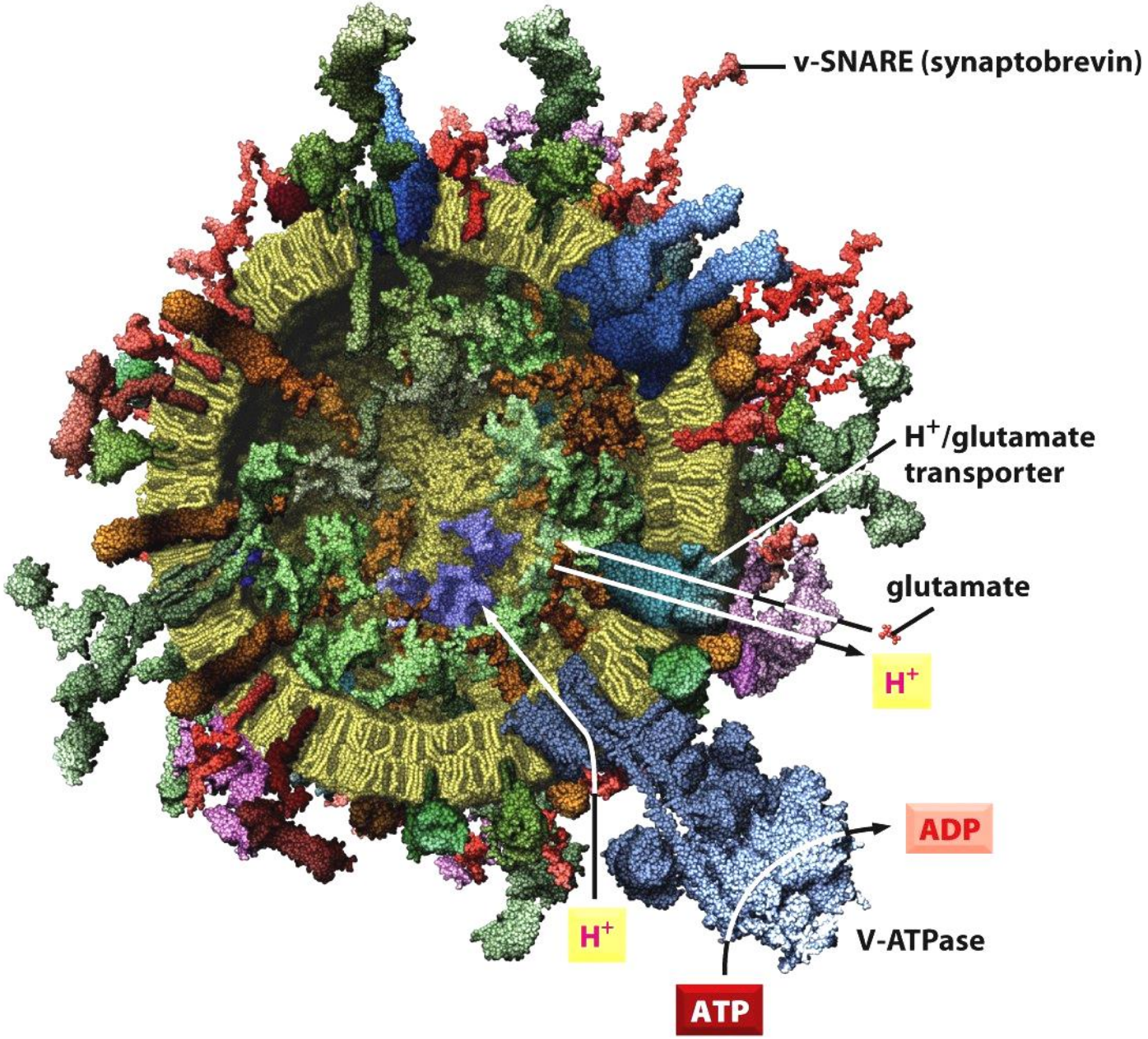


Dinámica de las vesículas sinápticas

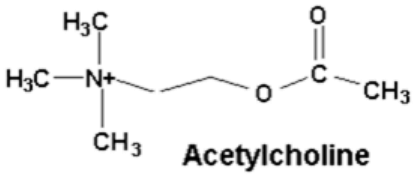


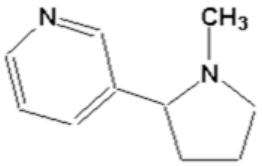


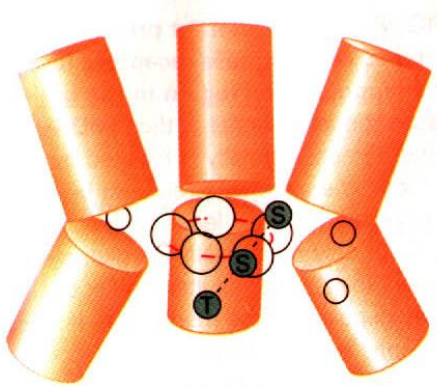
Estructura de una vesícula sináptica

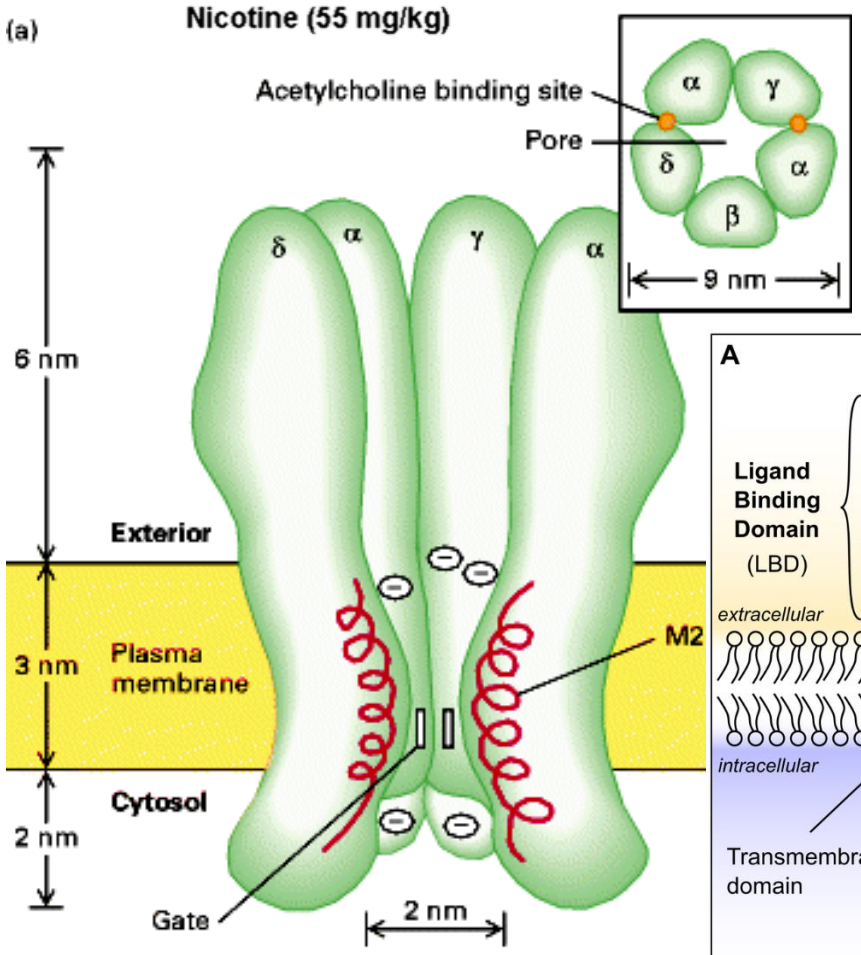


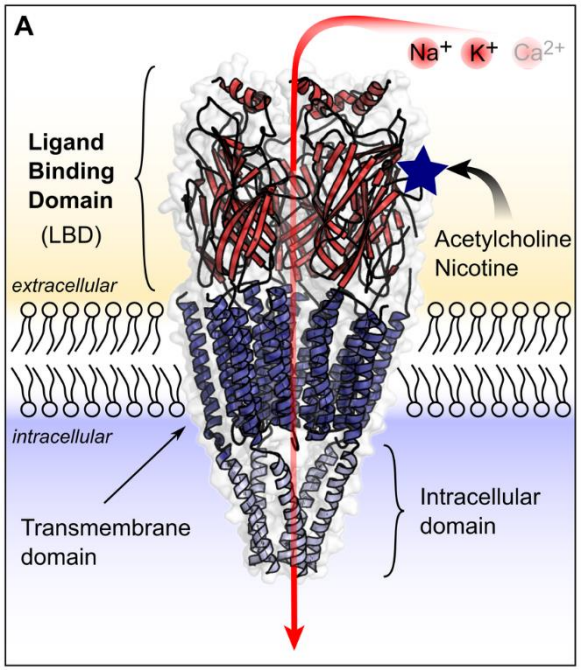
El receptor nicotínico de acetilcolina

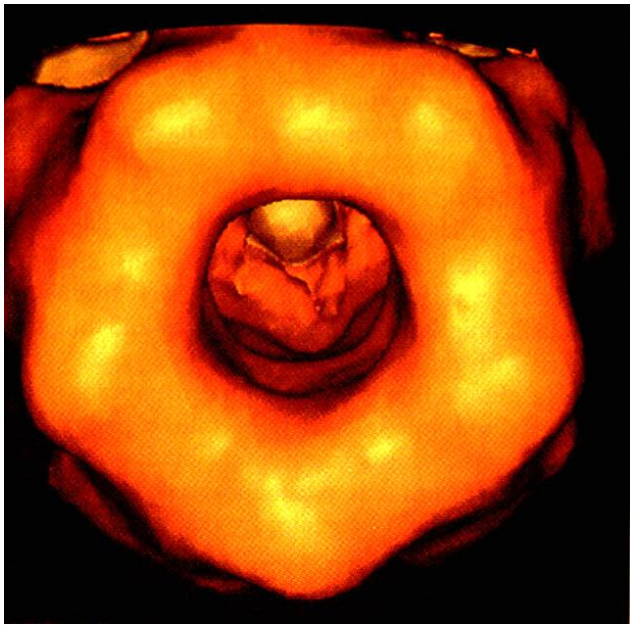




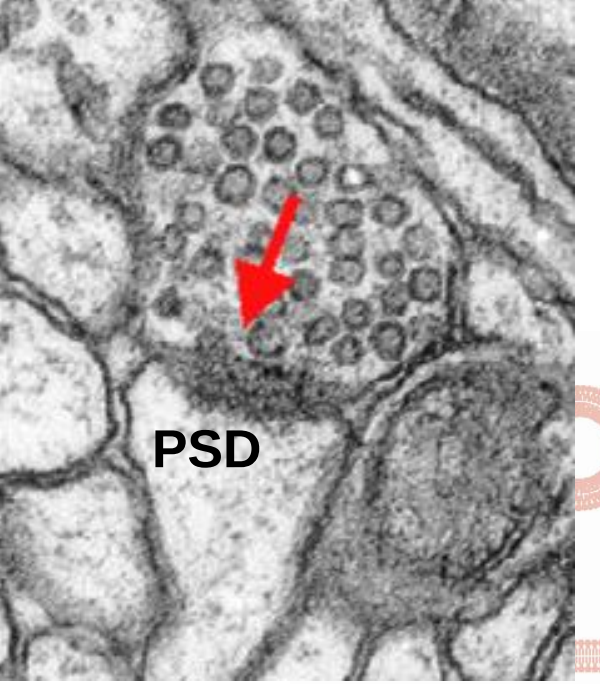


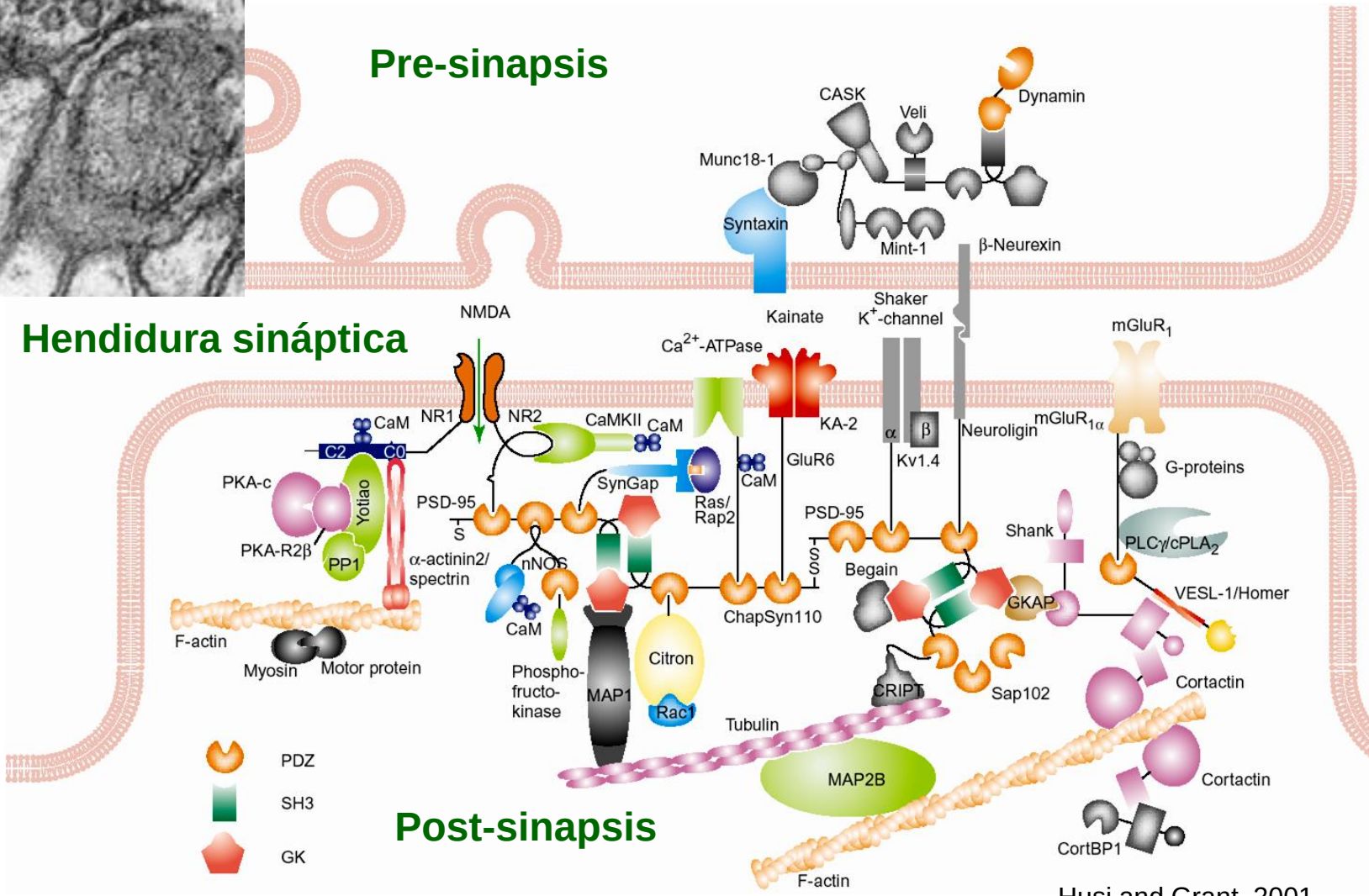






Organización molecular de la densidad post-sináptica

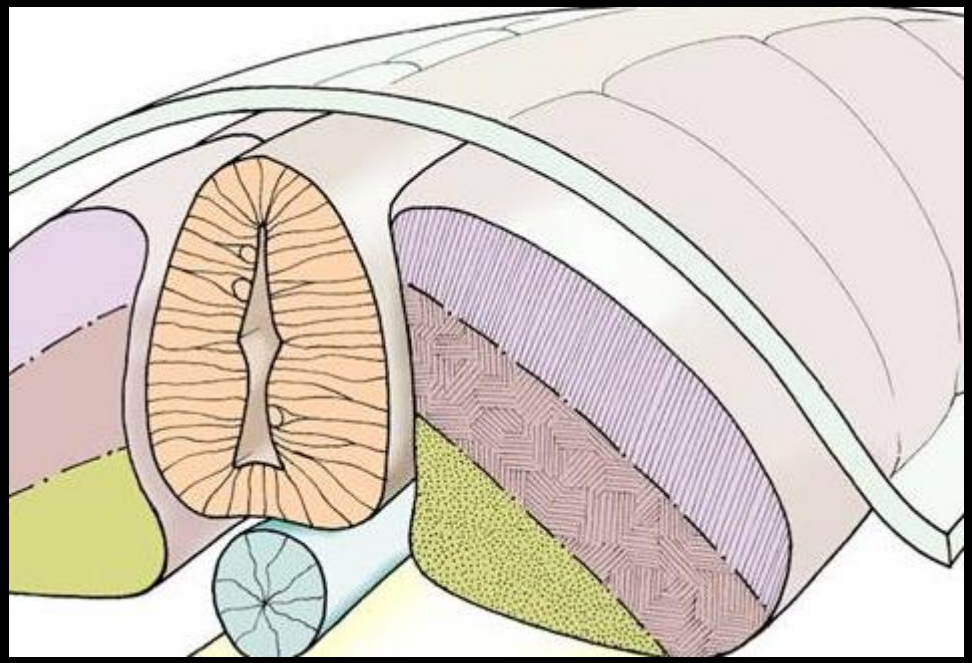




Husi and Grant, 2001

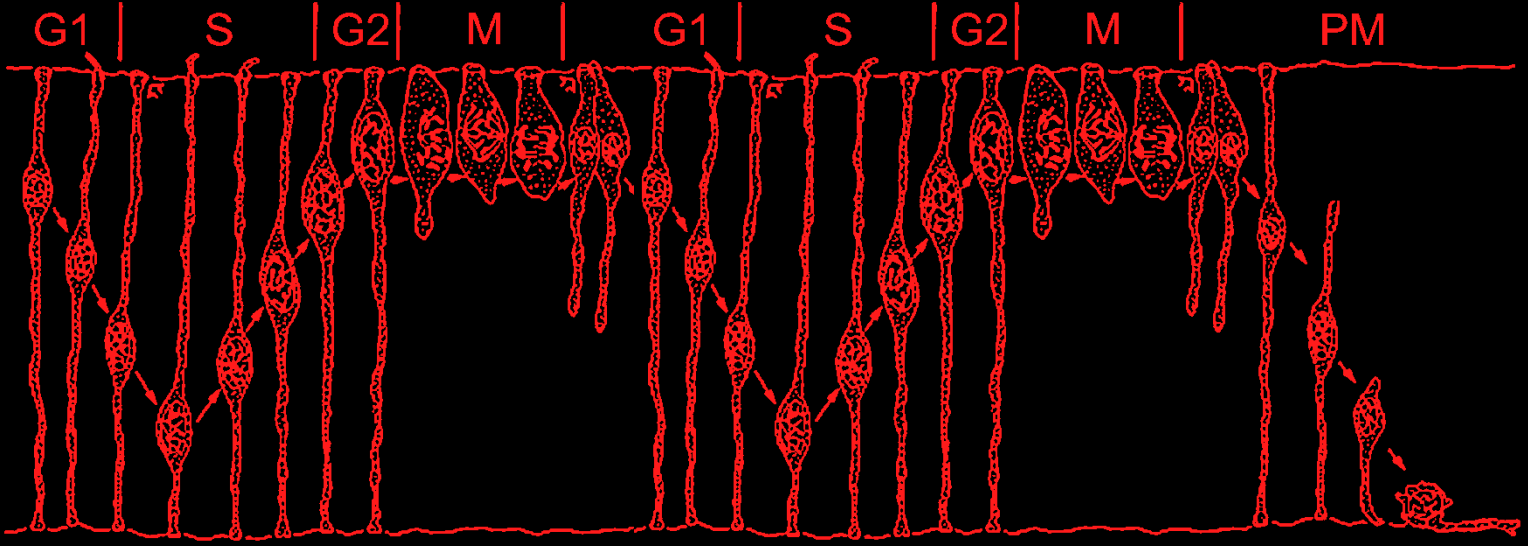
Diferenciación neuronal

El neuroepitelio y la Migración Nuclear Intercinética



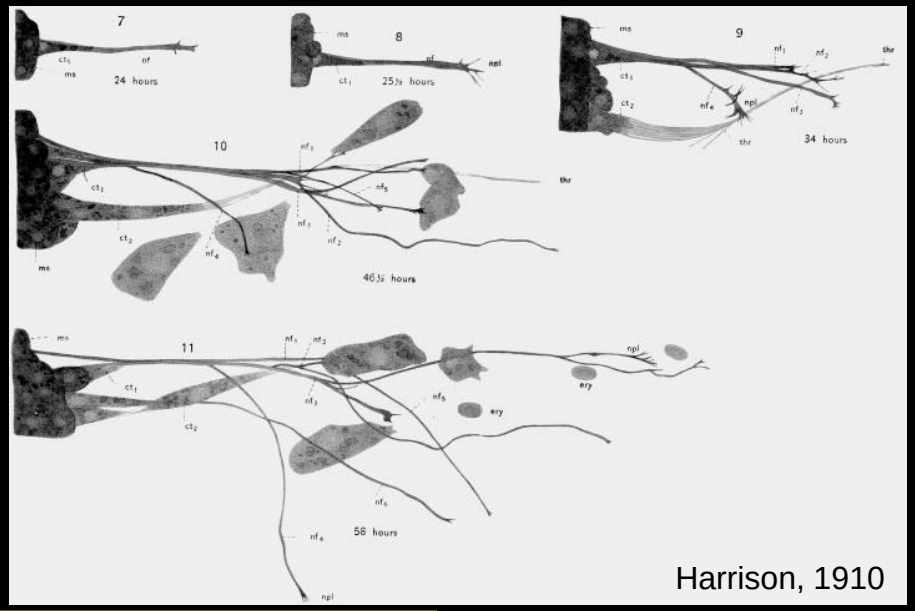
https://youtu.be/mQqhzi7h-5A

Dave Lyon, Jon Clarke



Estudios de polarización y crecimiento axonal en cultivo

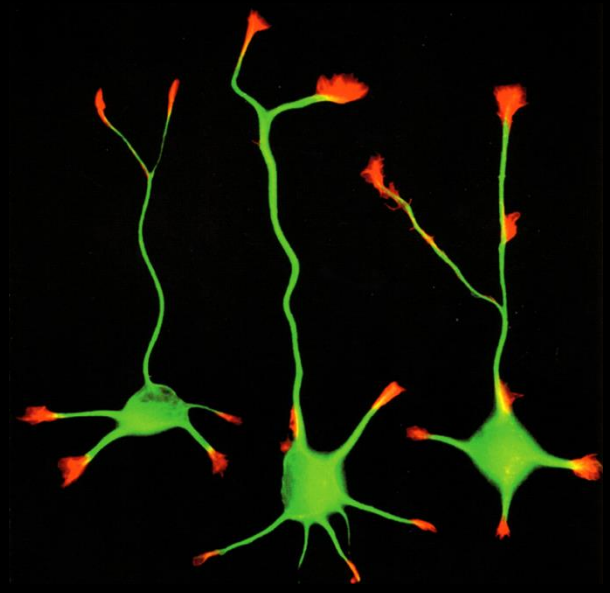

Ross G. Harrison



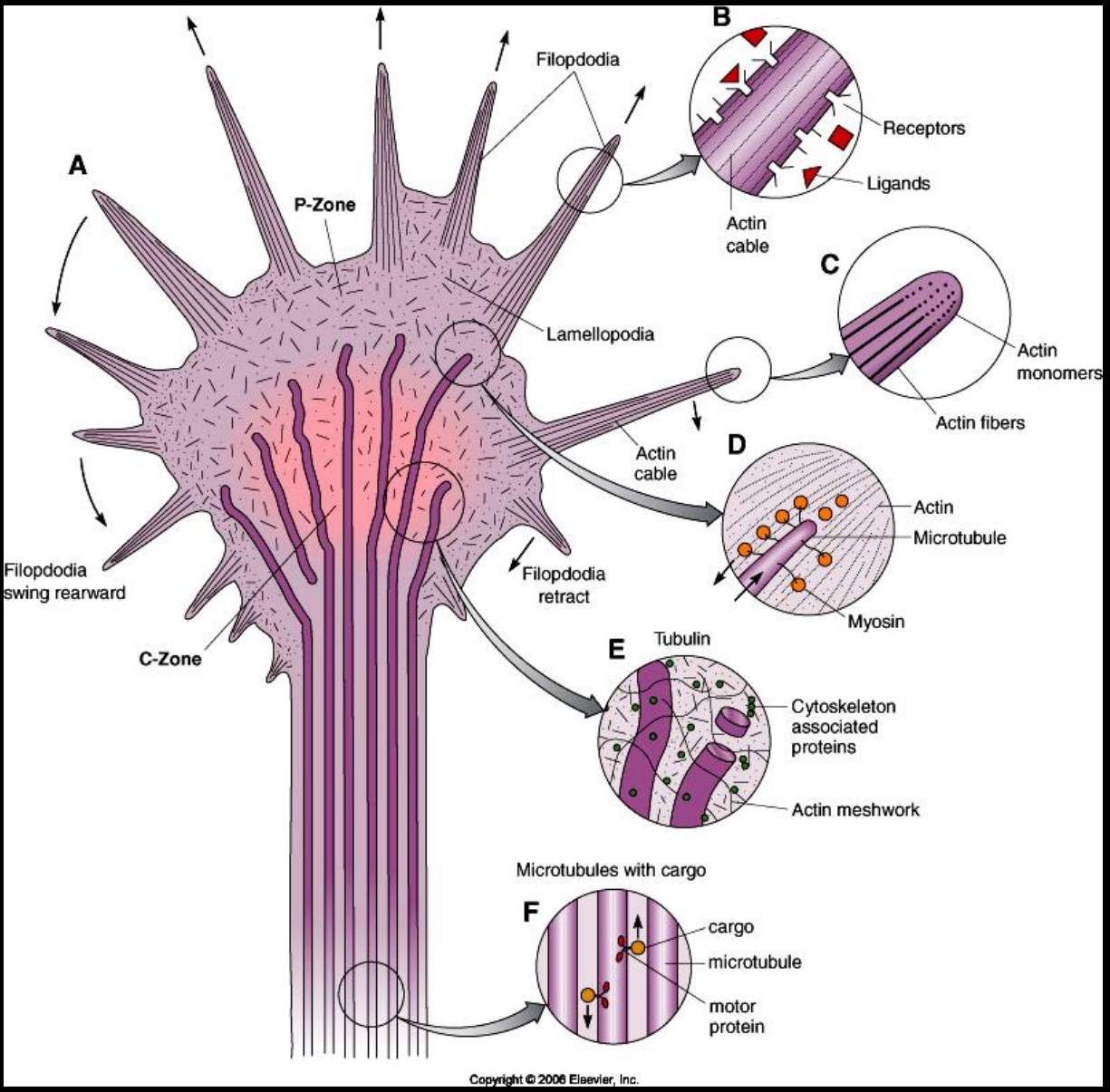
Harrison, 1910

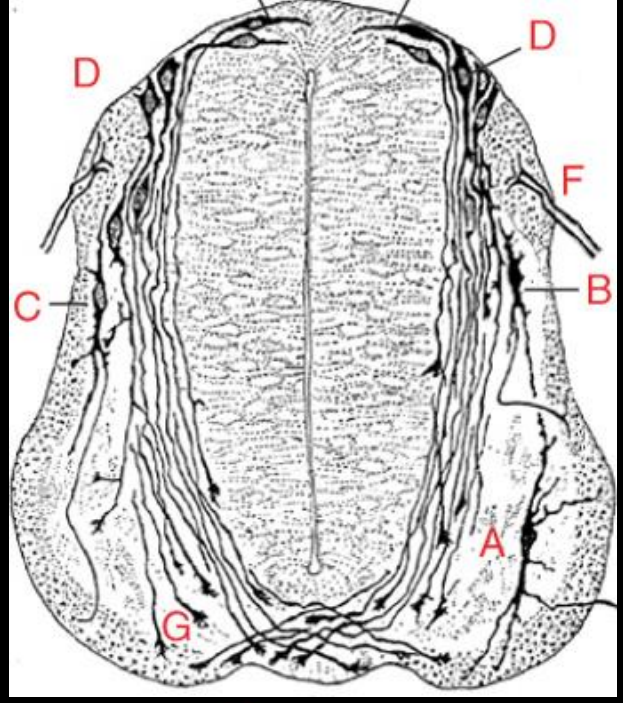

Gary Banker

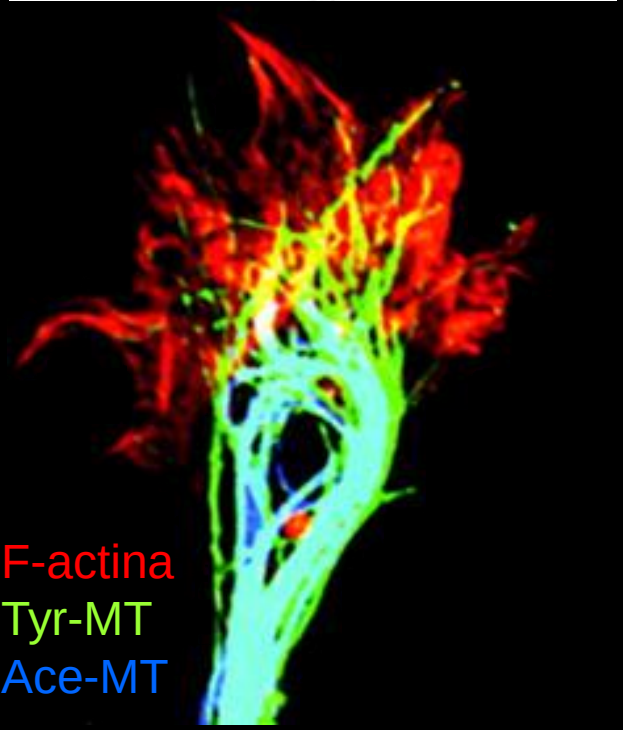
https://youtu.be/ujXbm3OmpJ8



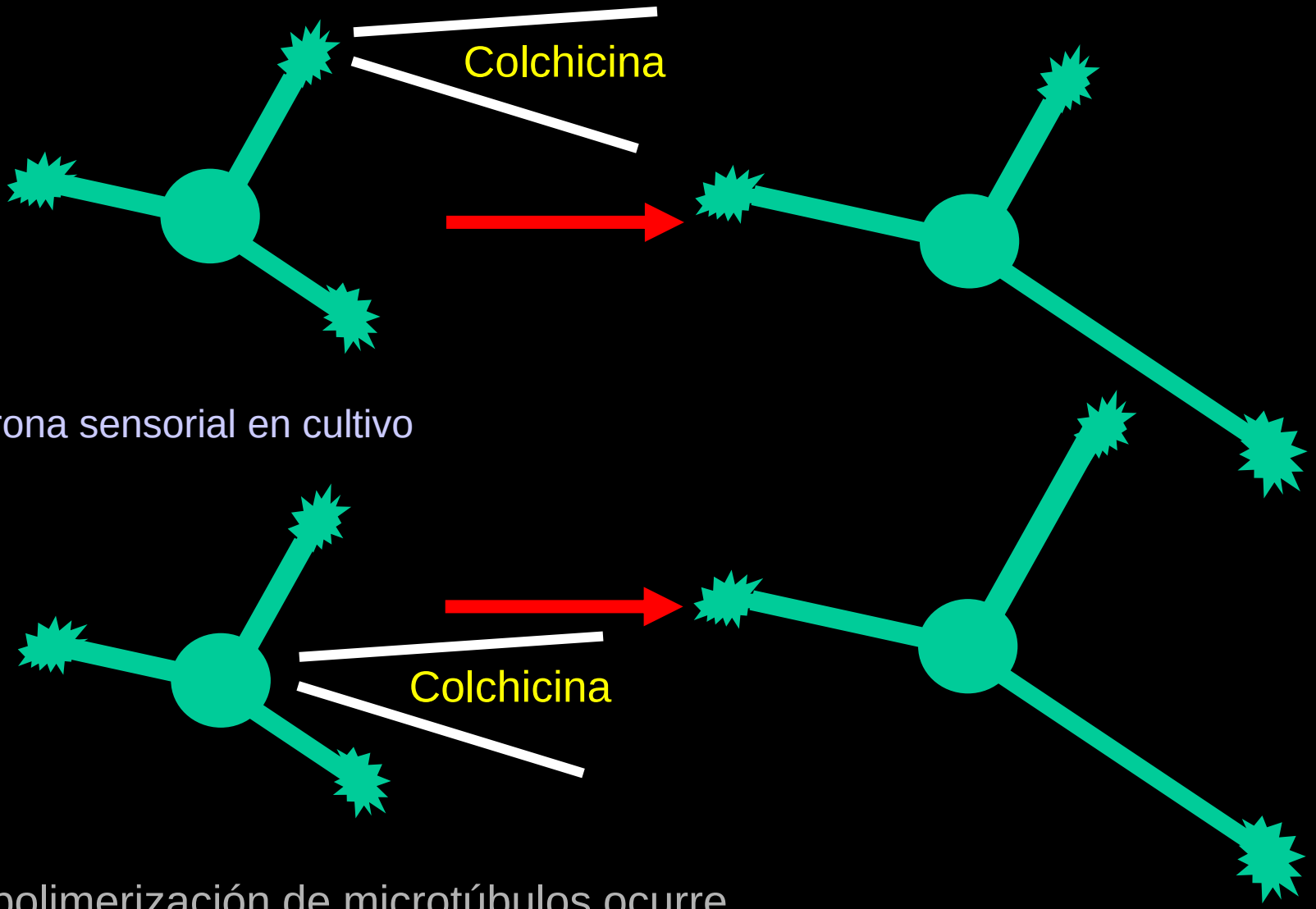
El cono de crecimiento







Rol del citoesqueleto en la polarización neuronal:
microtúbulos



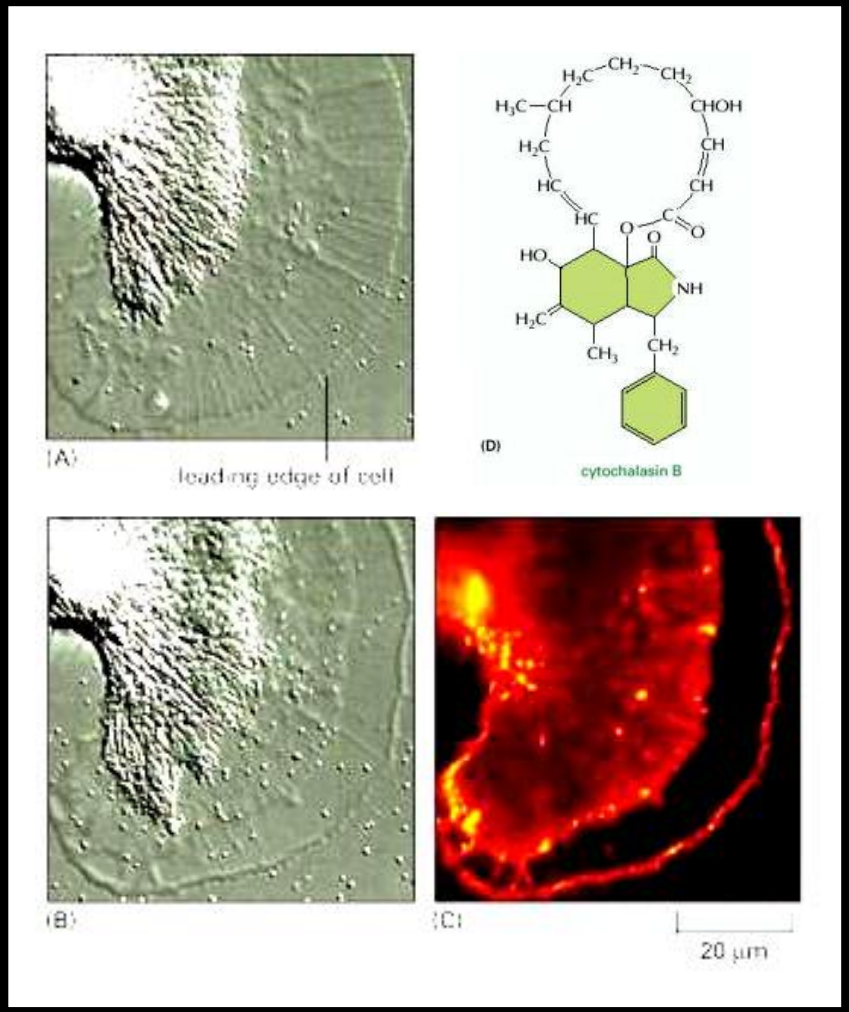
Neurona sensorial en cultivo

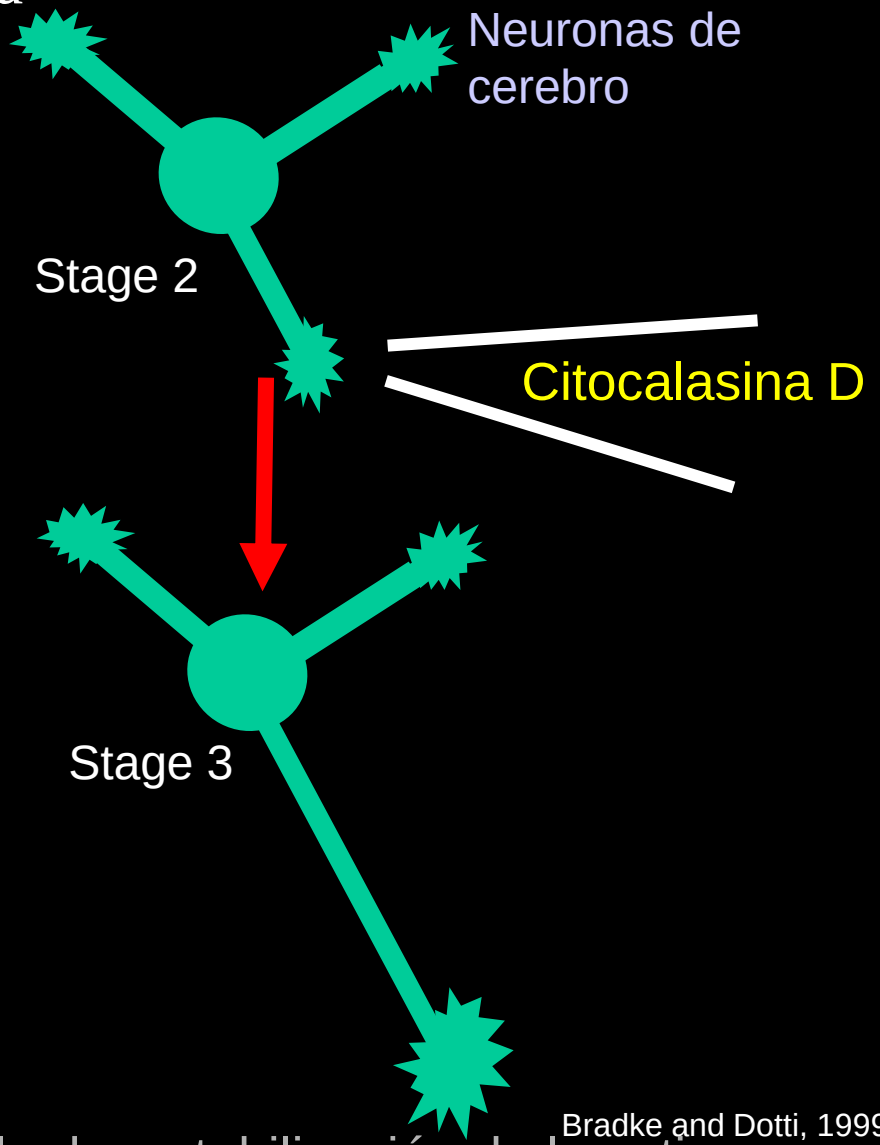
La polimerización de microtúbulos ocurre en el extremo de la neurita

Bamburg et al., 1986

Rol del citoesqueleto en la polarización neuronal:

actina

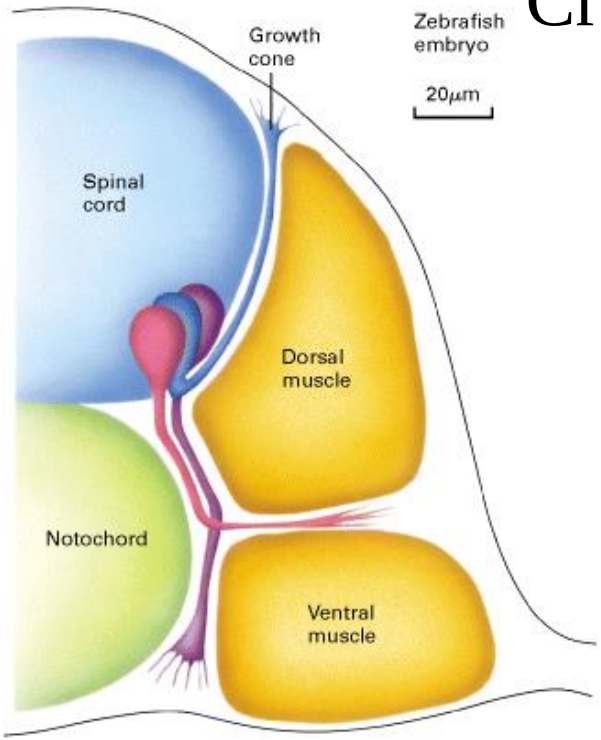


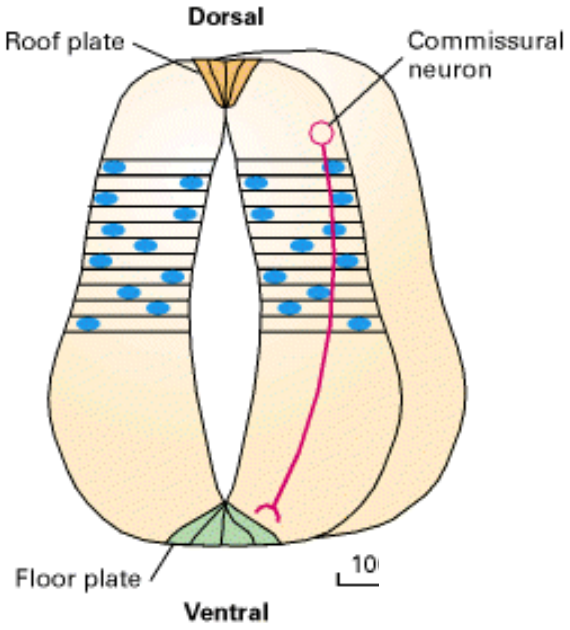


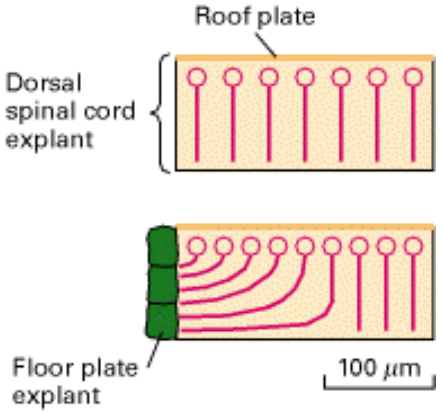
Bradke and Dotti, 1999

El crecimiento axonal requiere de la desestabilización de la actina

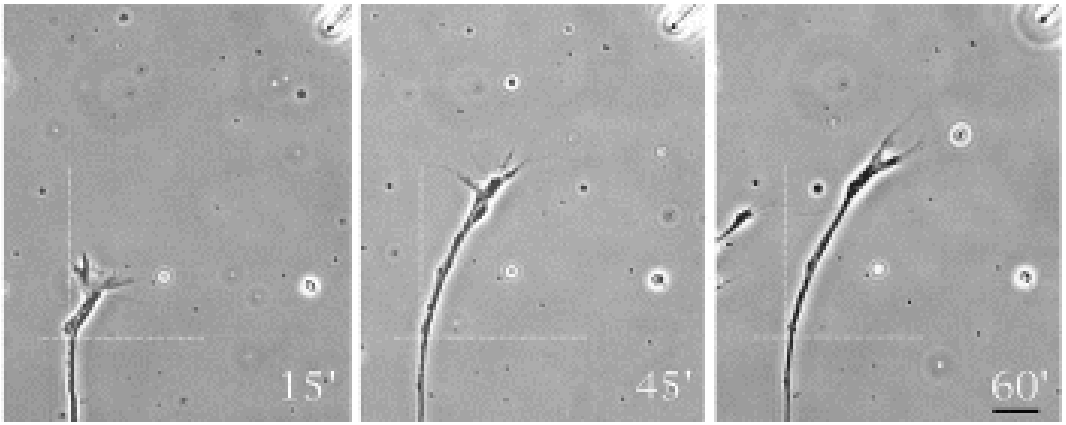
Crecimiento y guía axonal

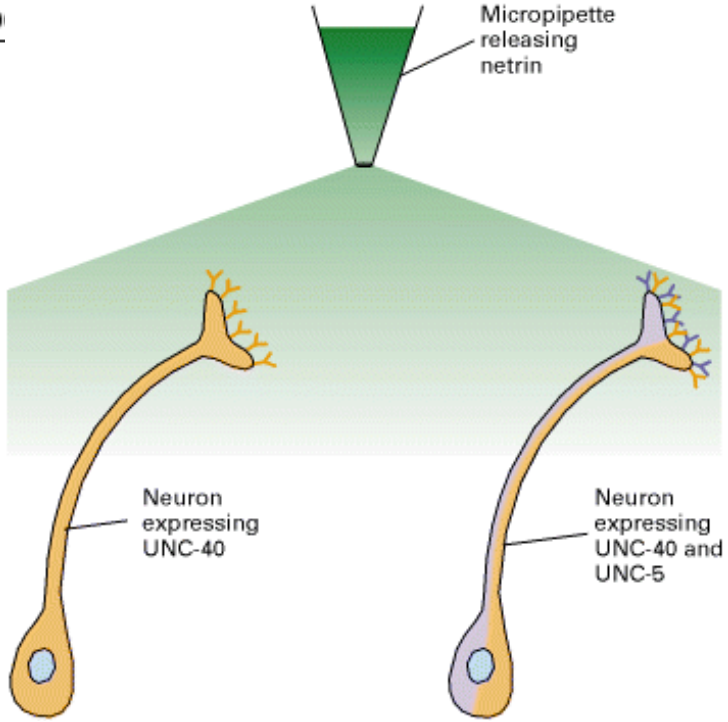






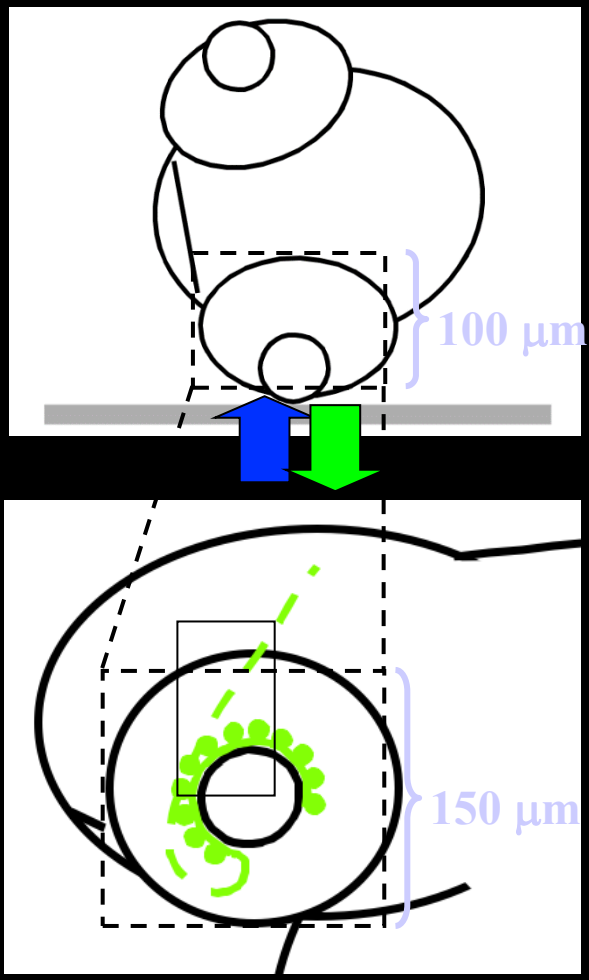
Ensayo de giro axonal

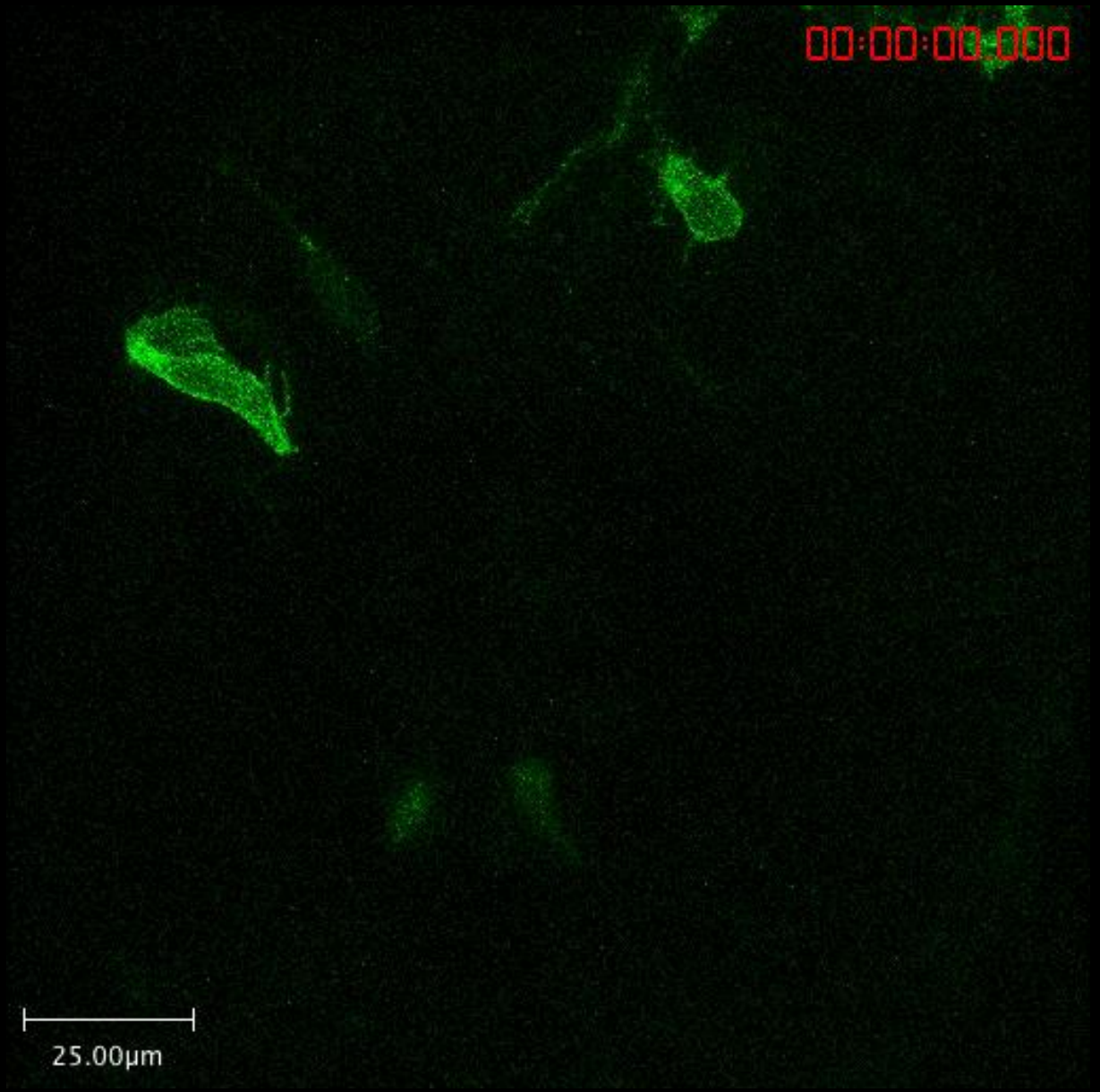




Diferenciación neuronal en la retina *in vivo*

"Ath5:Gap-GFP"





https://youtu.be/XlrRe1Q6DHM