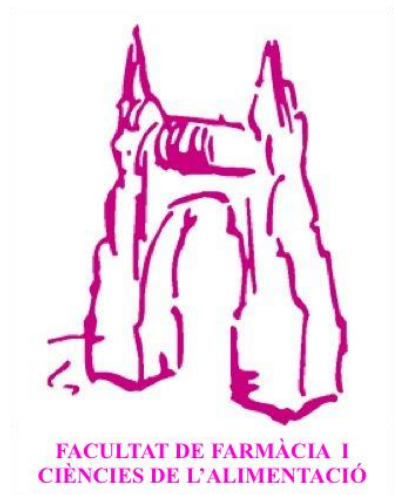


Noves evidències de l'efecte neuroprotector del Sistema Cannabinoide a nivell del Sistema Nerviós Central



UNIVERSITAT DE
BARCELONA

Curs 2025-2026

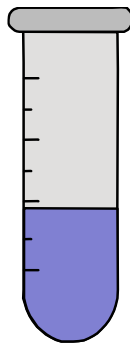
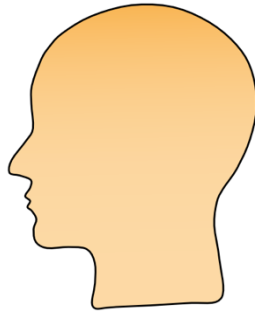


Jaume Lillo Jové

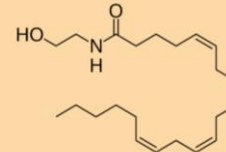
El cànnabis



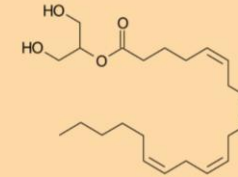
Els lligands cannabinoides



Endocannabinoides

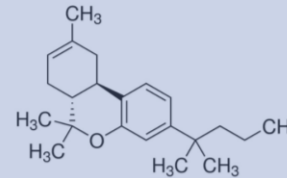


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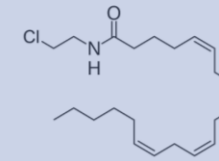


2-Araquidonilglicerol

Cannabinoides sintètics

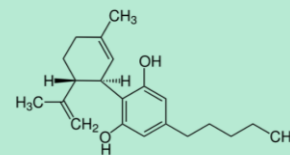


JWH-133

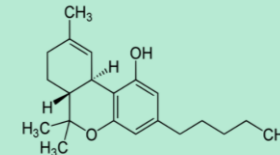


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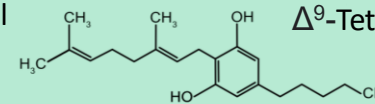
Fitocannabinoides



Cannabidiol

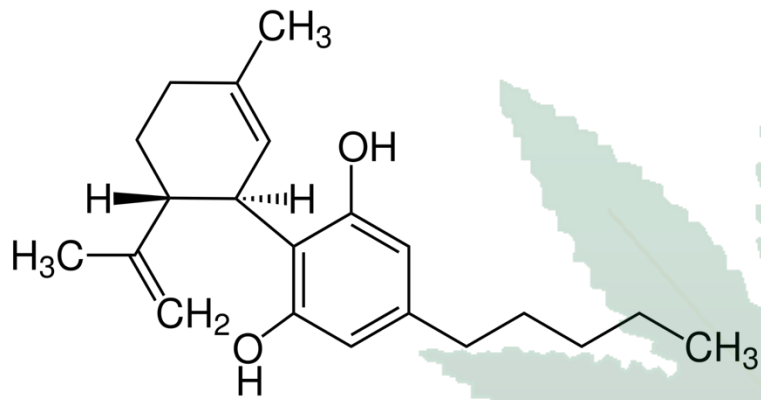


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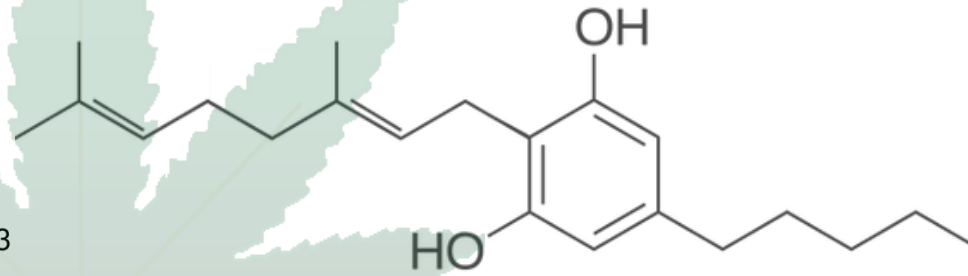


Cannabigerol

El cannabidiol i el cannabigerol

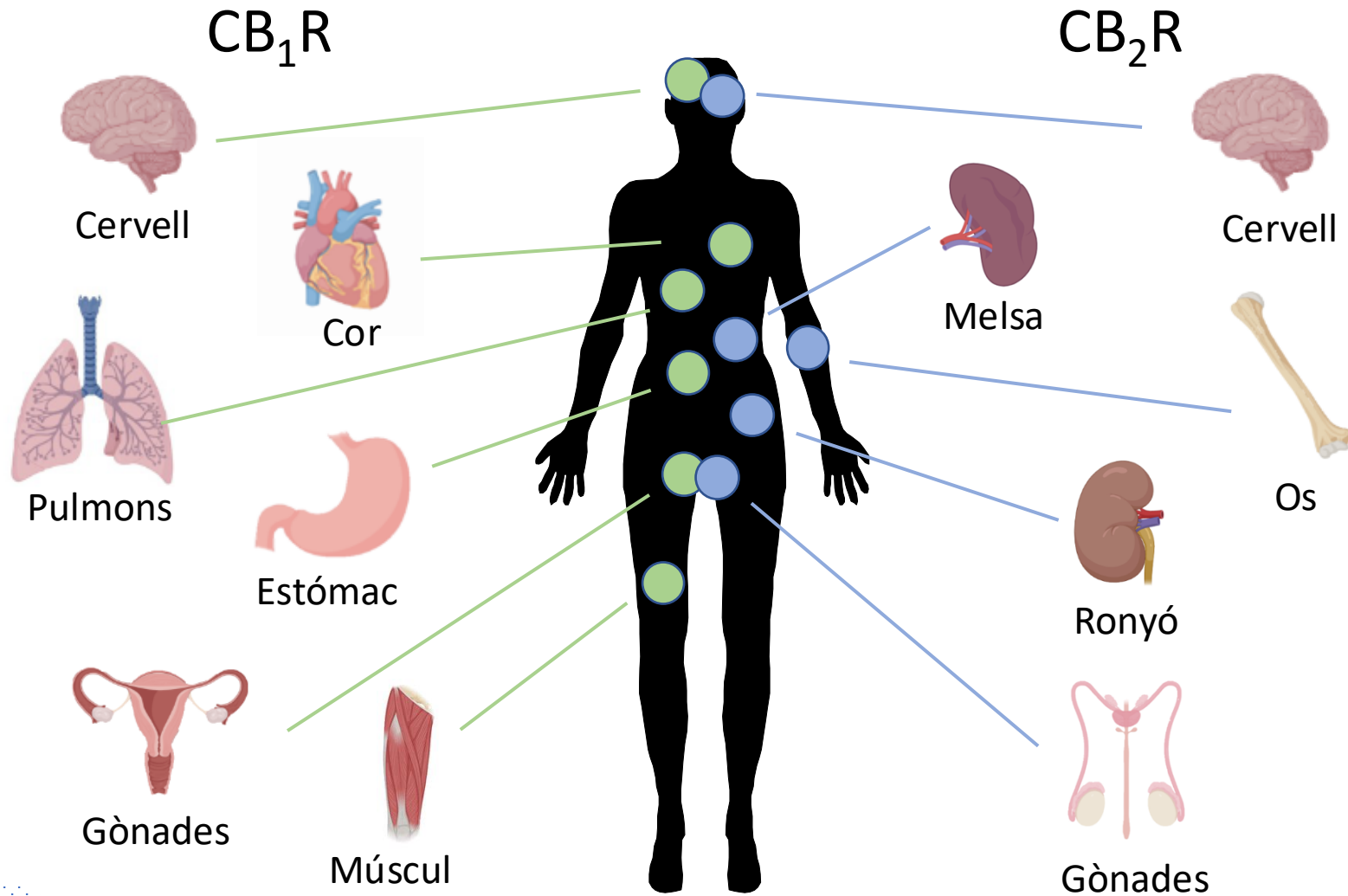


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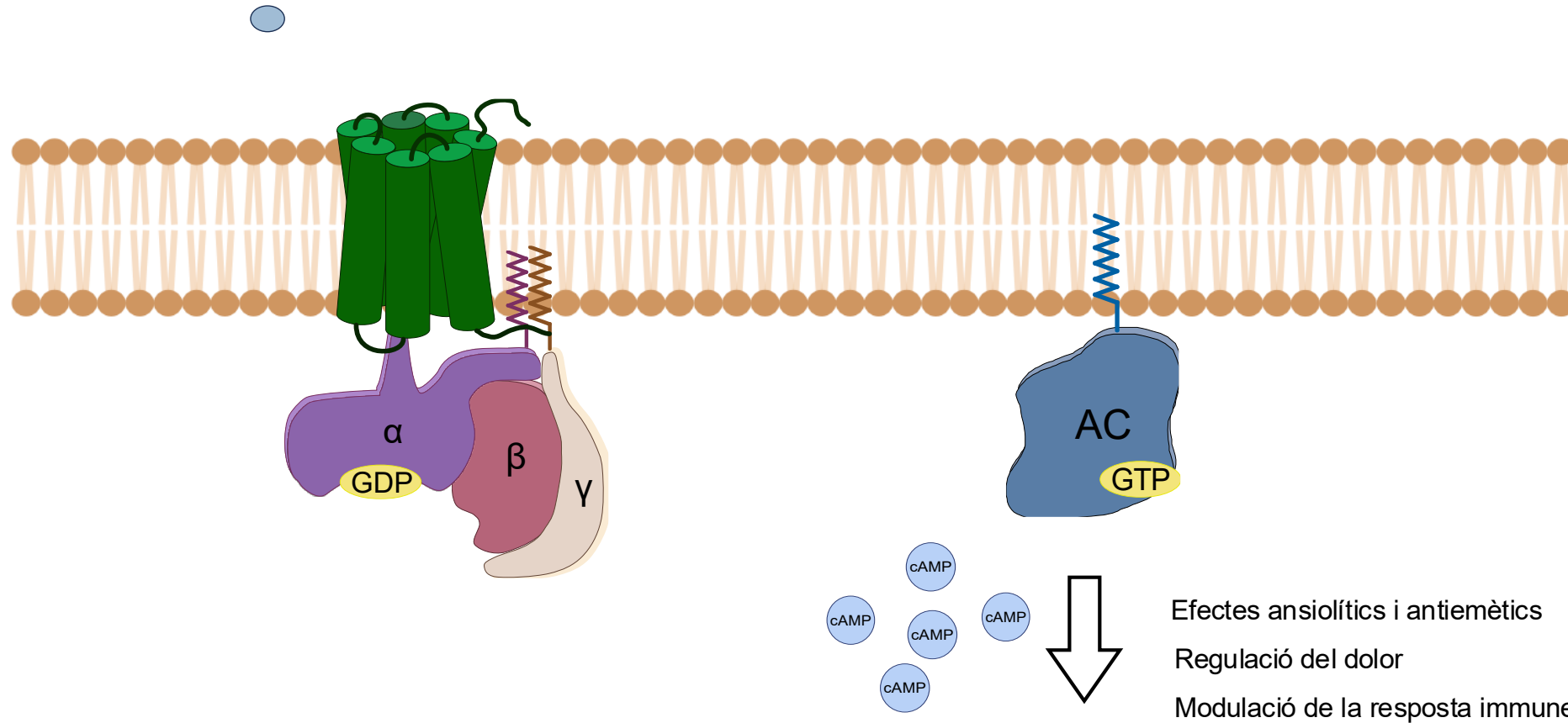


CBG

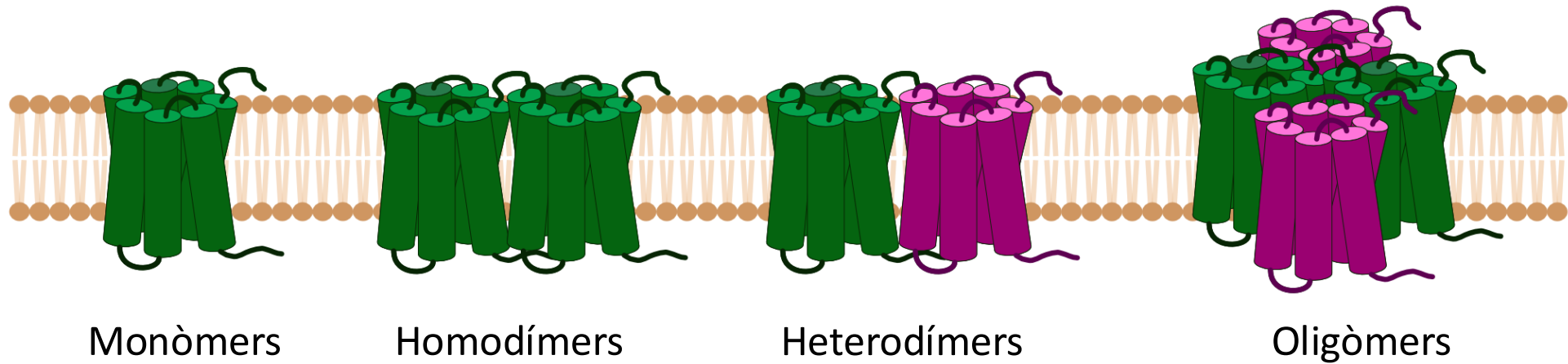
Els receptors cannabinoïdes



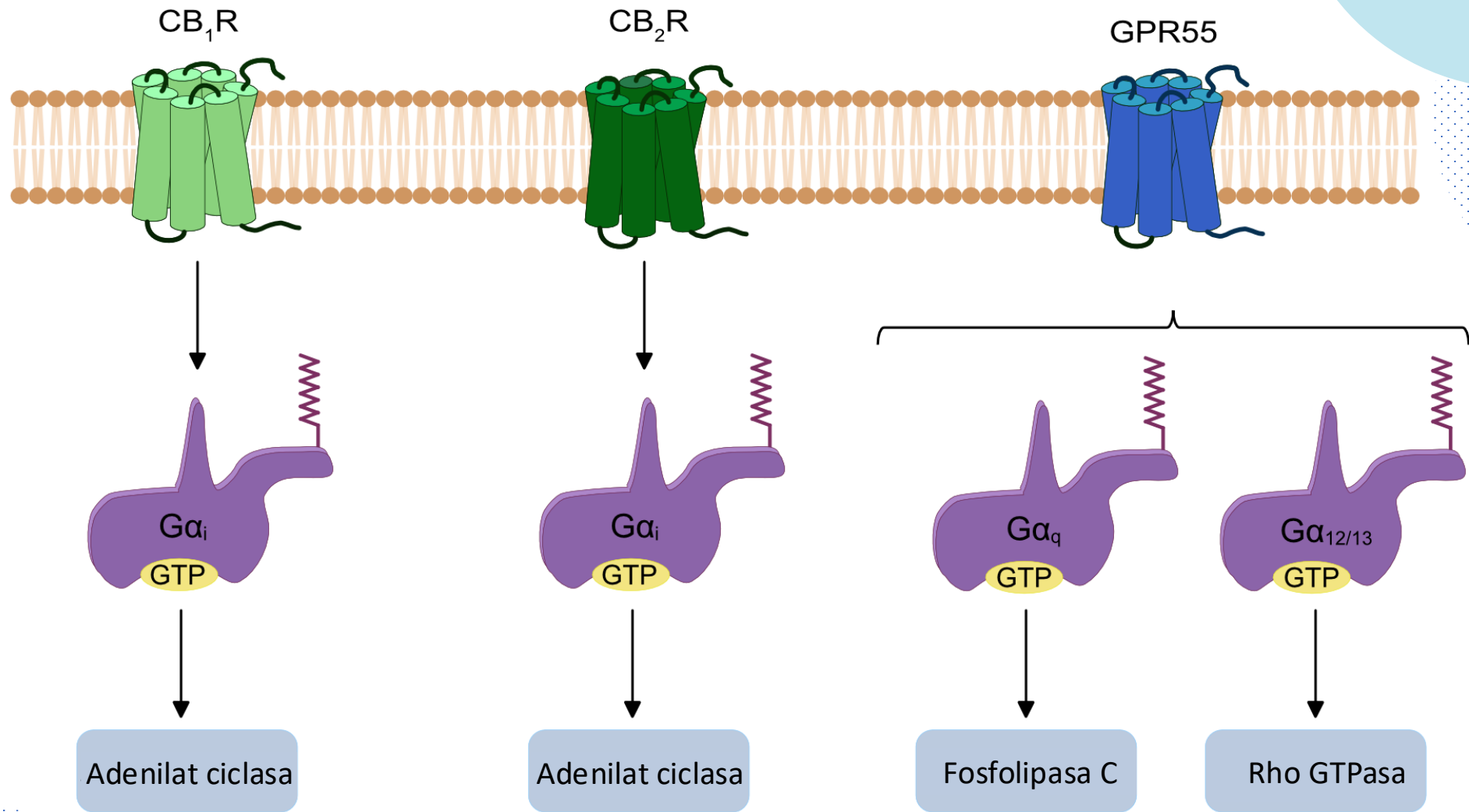
Els receptors cannabinoïdes



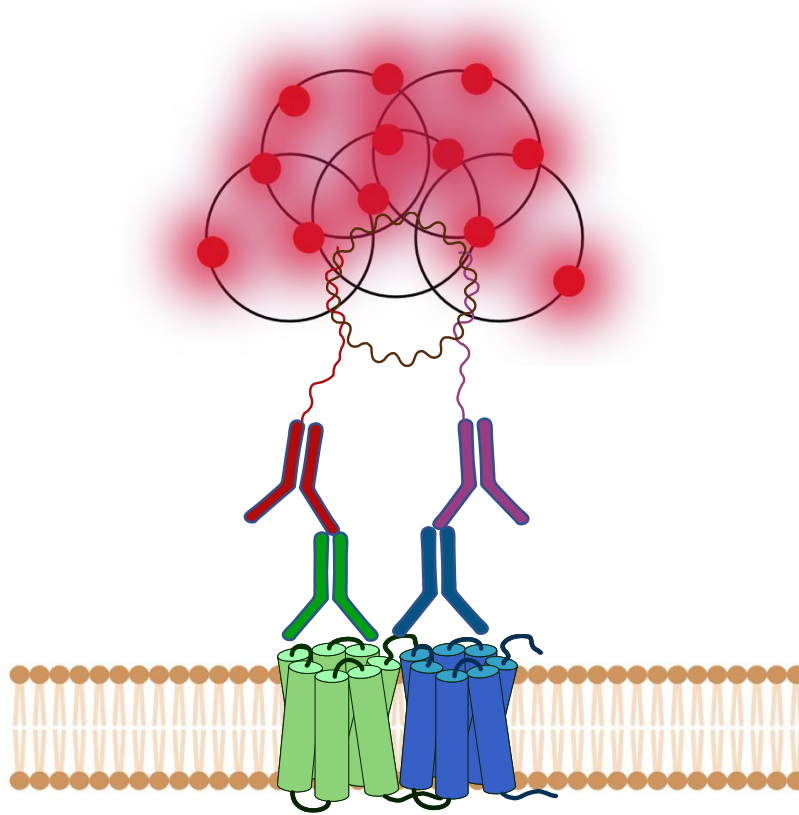
L'oligomertització dels GPCR



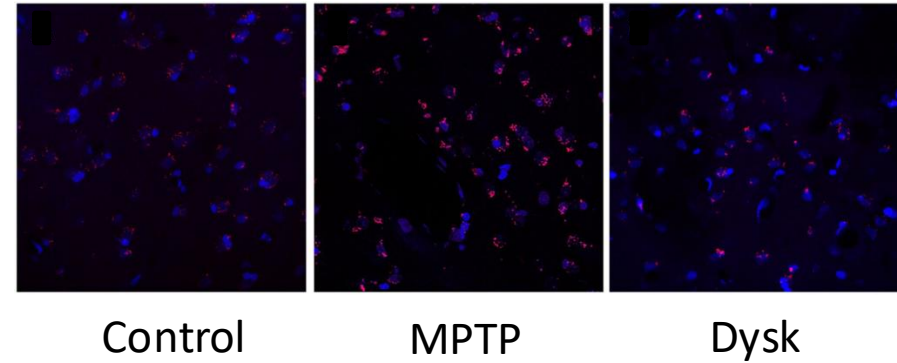
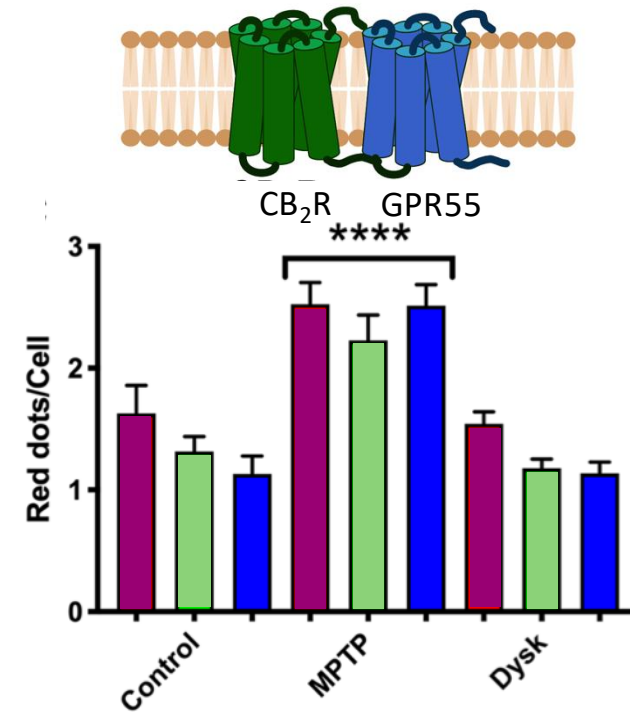
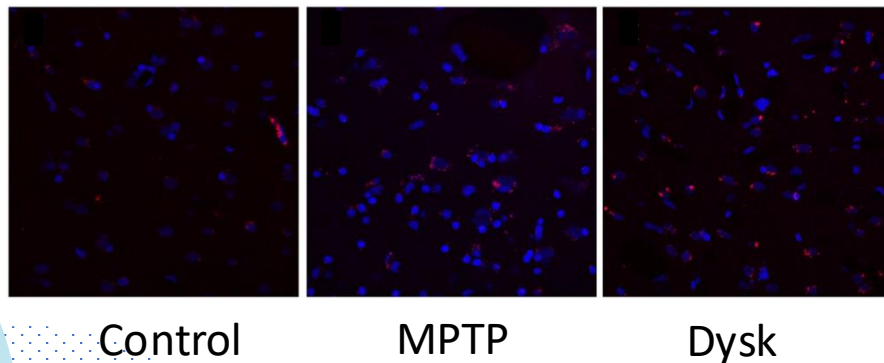
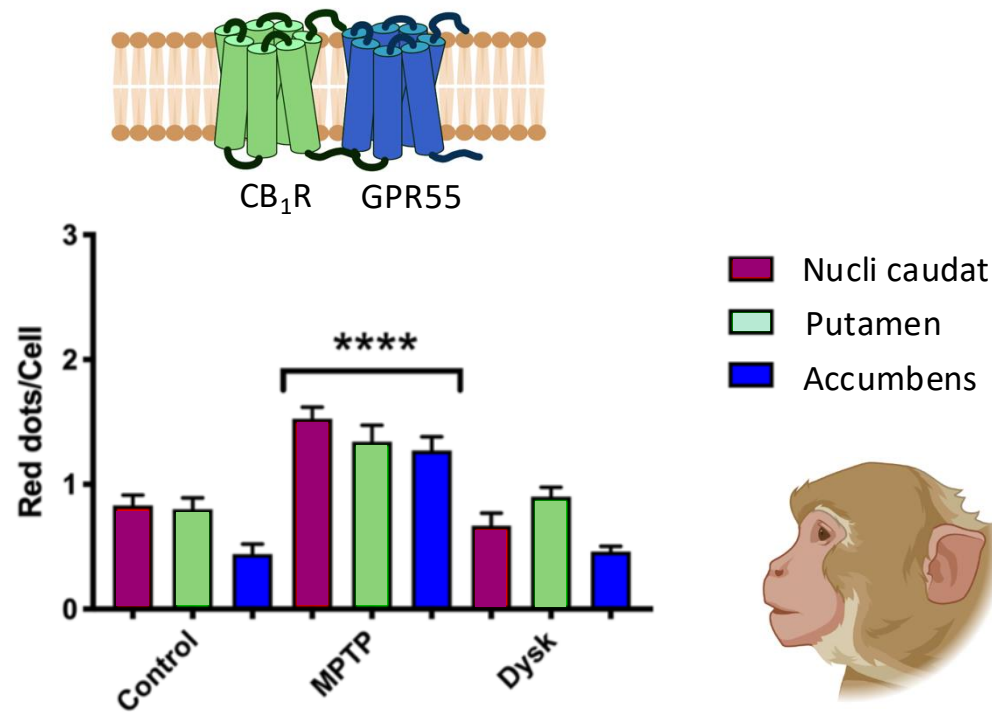
El receptor GPR55



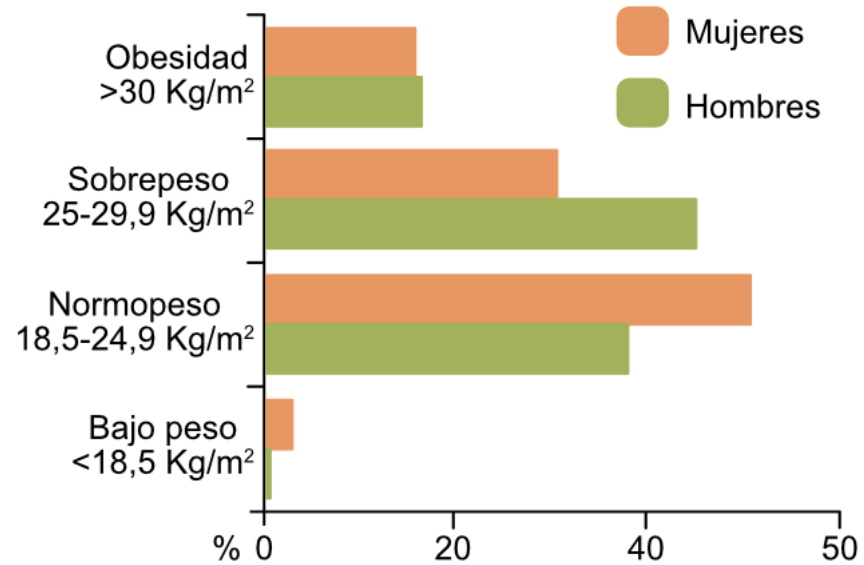
L'assaig de lligació per proximitat (PLA)



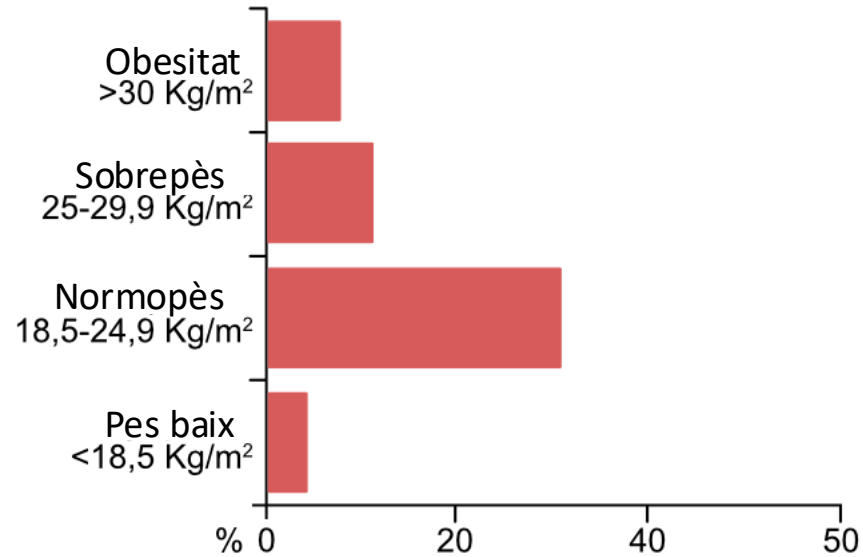
Implicació de CB₁R-GPR55 i CB₂R-GPR55 en el Parkinson



L'obesitat

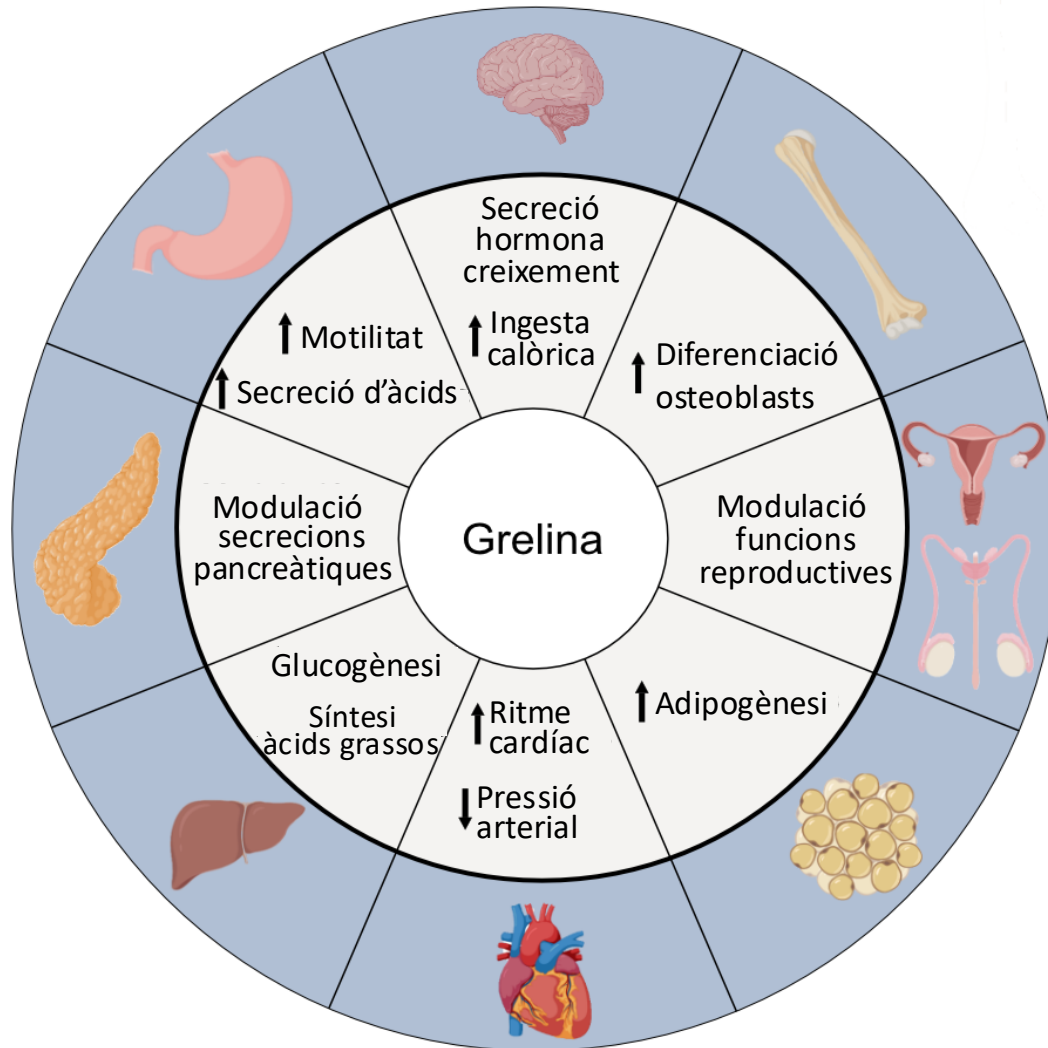
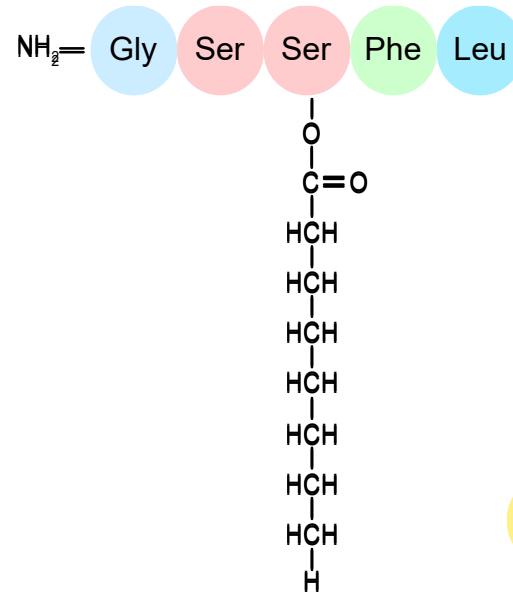


Incidència de l'obesitat a Espanya



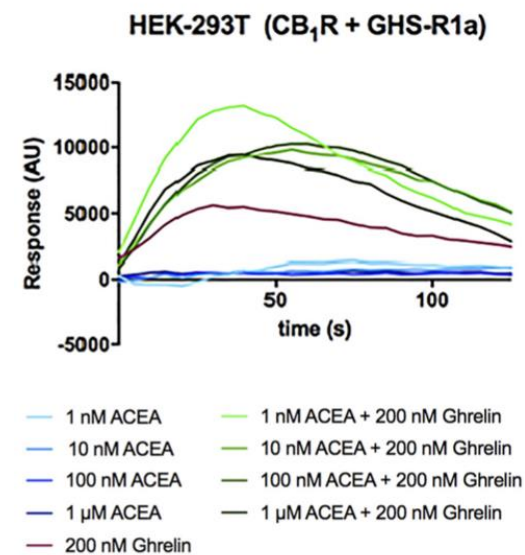
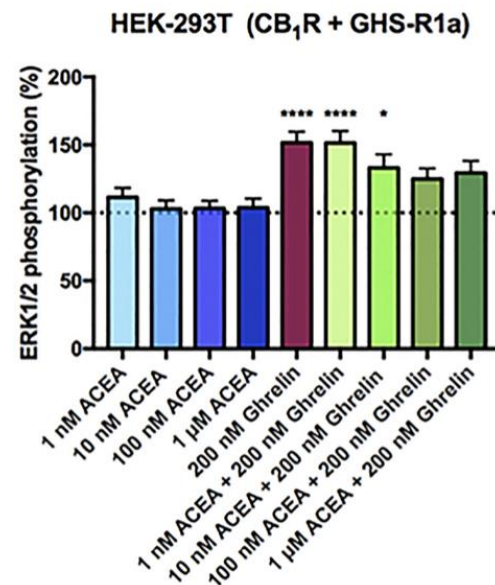
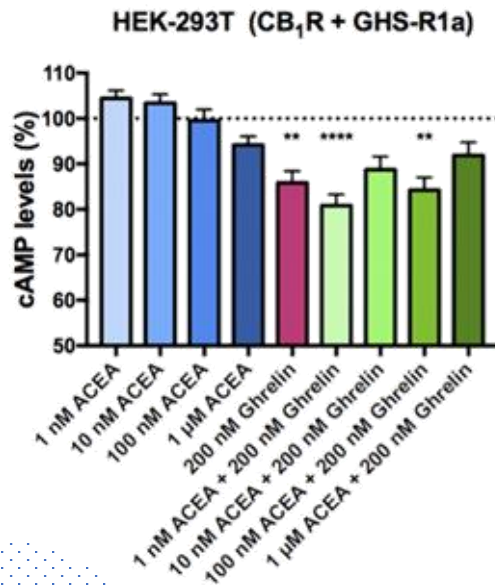
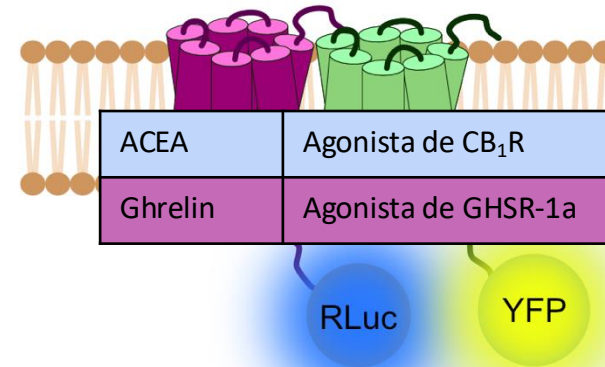
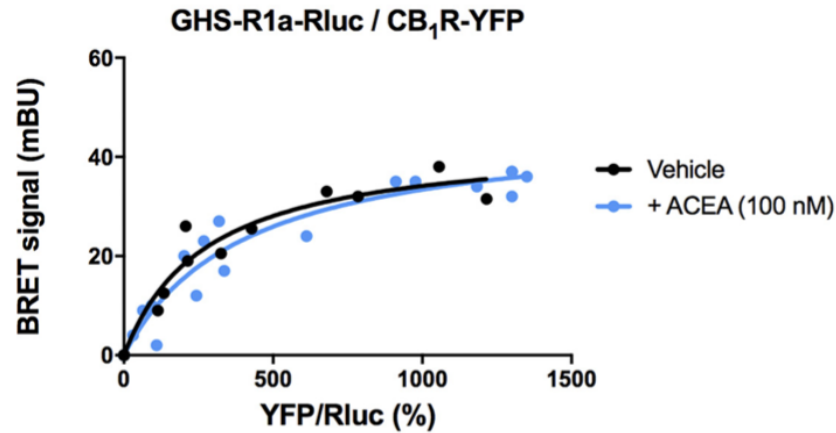
Incidència de l'obesitat infantil a Espanya

La grelina

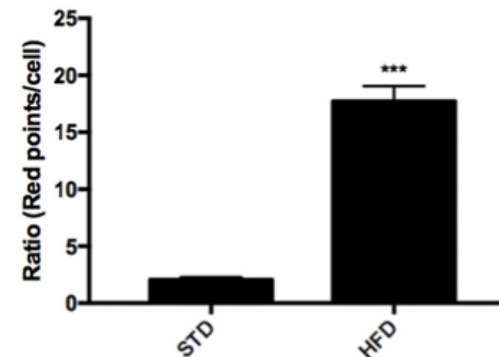
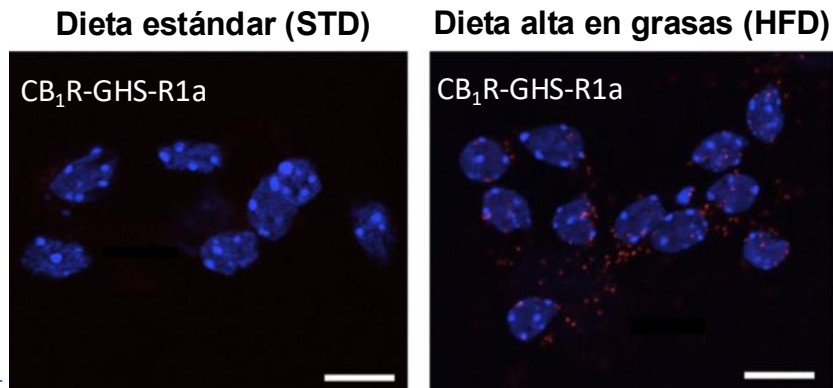
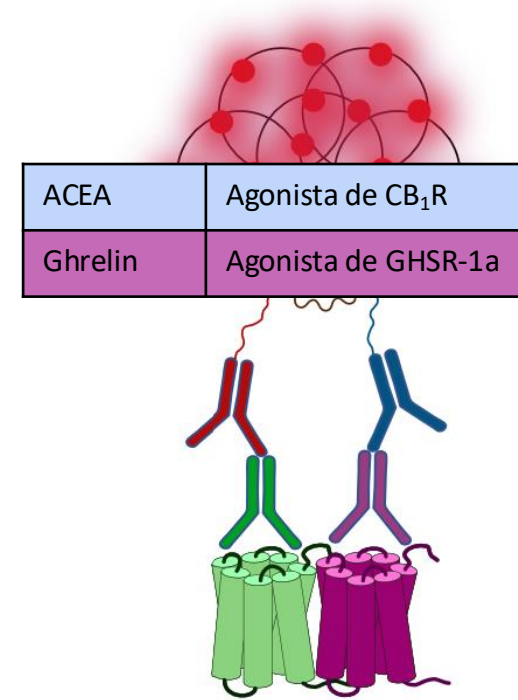
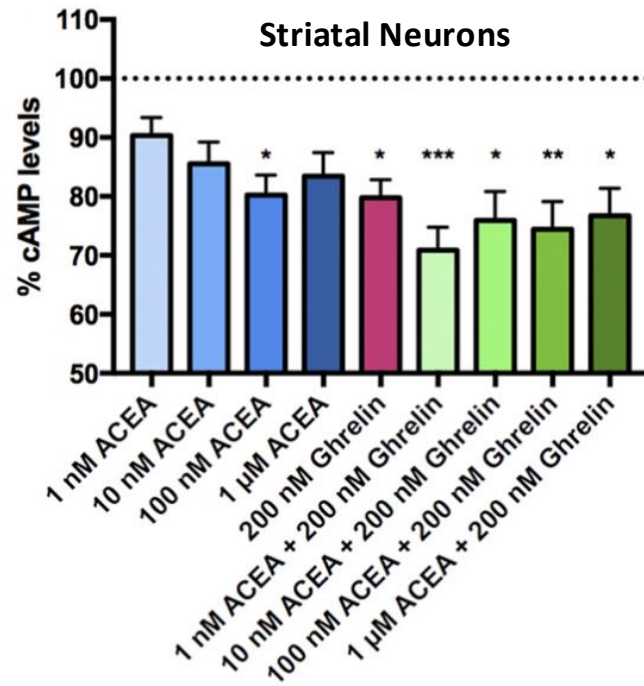


The diagram illustrates the activation of a G-protein coupled receptor (GPCR) and the subsequent signaling pathway. A ligand (blue circle) binds to the GPCR, causing a conformational change that activates the G-protein (α, β, γ subunits). The activated G-protein then activates Adenylate Cyclase (AC), which converts GTP to cAMP. cAMP then activates Protein Kinase A (PKA), which phosphorylates the target protein (indicated by a yellow box).

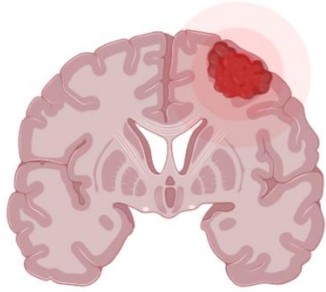
Caracterització de l'heteròmer CB₁R-GHS-R1a



El rol de l'heteròmer CB₁R-GHS-R1a en l'obesitat



L'ictus

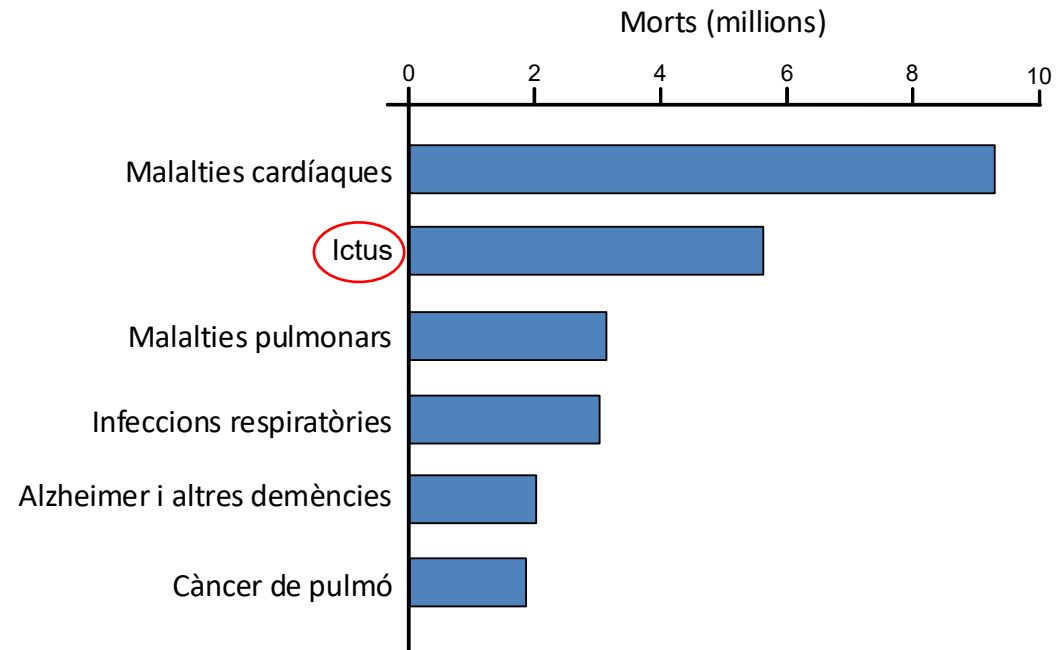


Falta d'oxigen al cervell

Segona causa de mort a nivell global

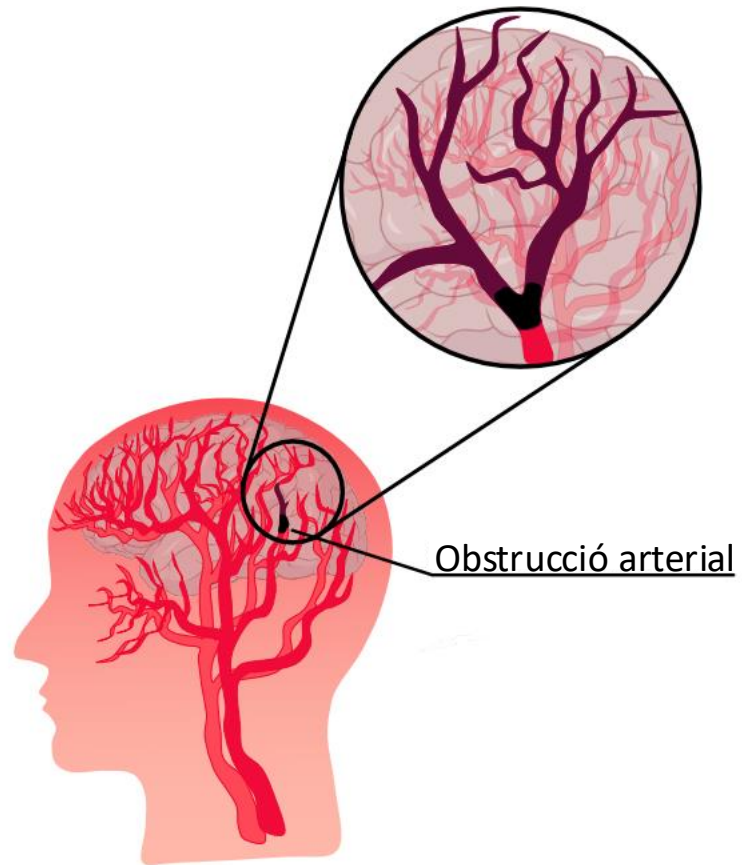
Causa principal de discapacitat

Causas de mort a nivell global, 2016

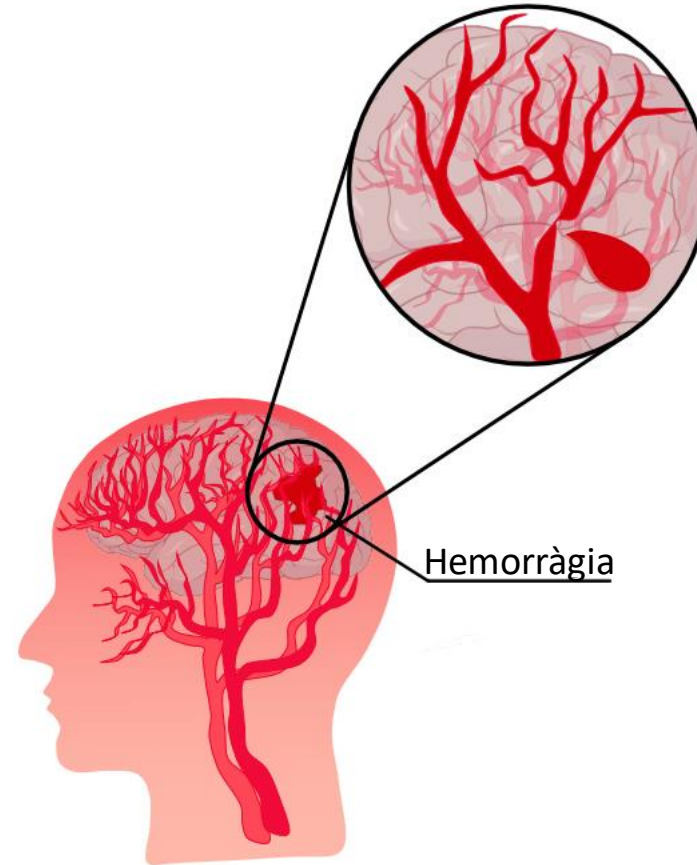


L'ictus

Ictus Isquèmic



Ictus Hemorràgic



El receptor 5HT_{1A}

Serotonin 5HT_{1A} receptor availability and pathological crying after stroke

M Møller¹, G Andersen, A Gjedde

PMID: 17661792

DOI: 10.1111/j.1600-0404.2007.00869

Drug-induced Hypothermia by 5HT_{1A} Agonists Provide Neuroprotection in Experimental Stroke: New Perspectives for Acute Patient Treatment

Flemming Fryd Johansen¹, Henrik Hasseldam², Matthias Nybro Smith²

PMID: 25307429

DOI: 10.1016/j.jstrokecerebrovasdis.2014.07.019

A review of the neuroprotective properties of the 5-HT_{1A} receptor agonist repinotan HCl (BAYx3702) in ischemic stroke

A C Berends¹, P G M Luiten, C Nyakas,

PMID: 16614737

DOI: 10.1111/j.1527-3458.2005.tb0009

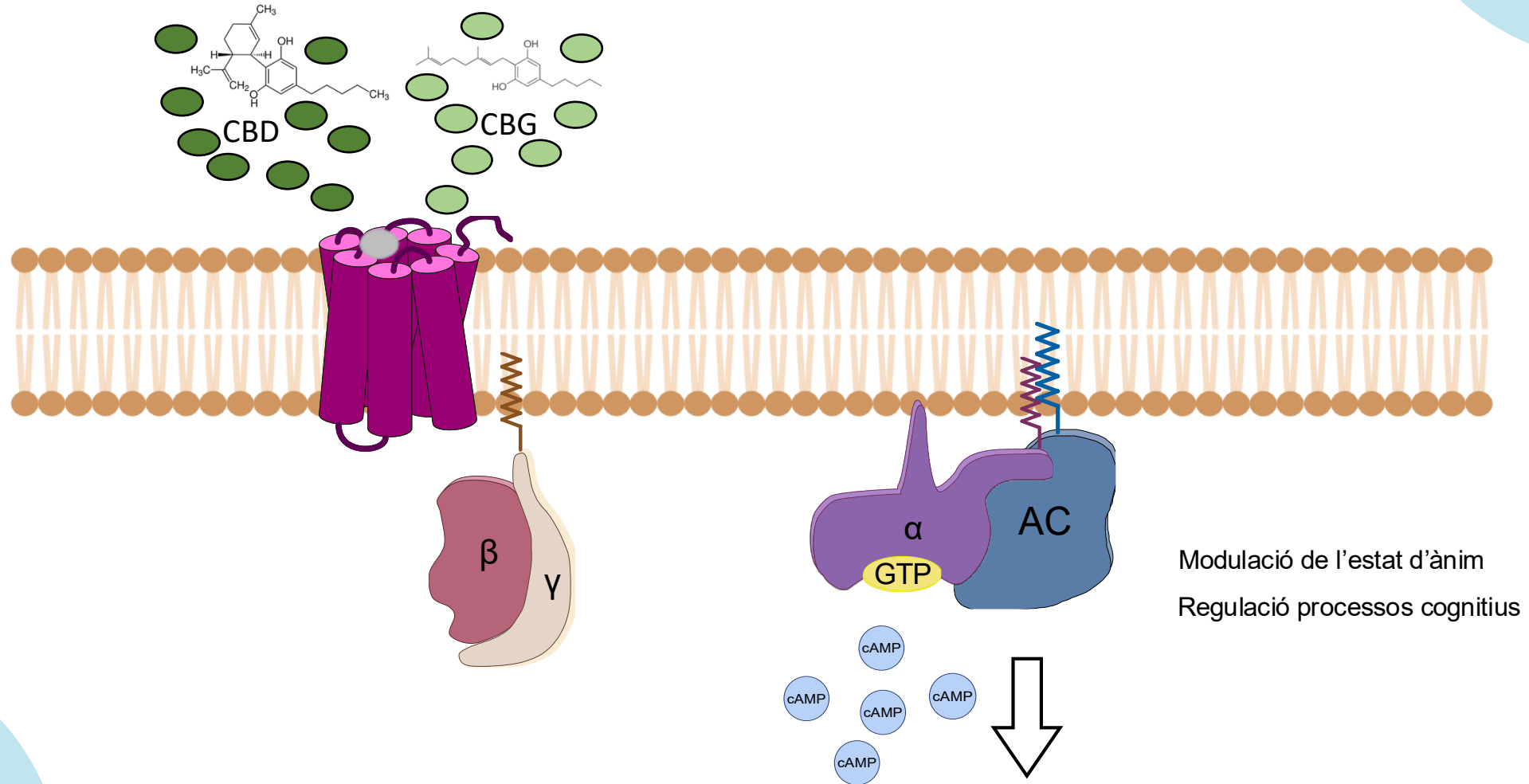
Neuroprotective efficacy of repinotan HCl, a 5-HT_{1A} receptor agonist, in animal models of stroke and traumatic brain injury

Frank Mauler¹, Ervin Horváth

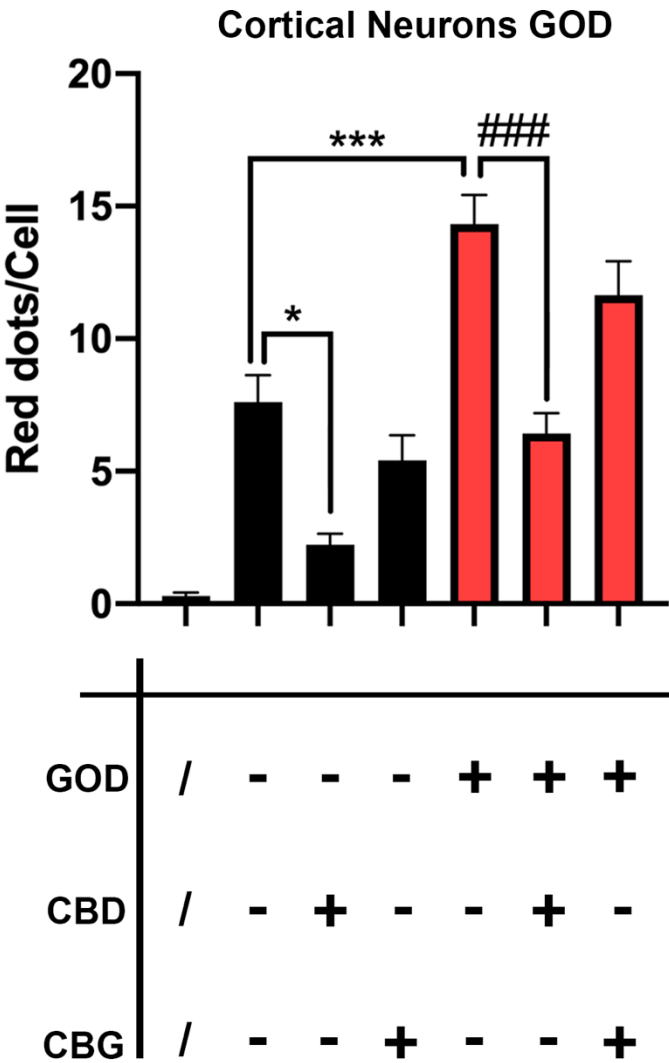
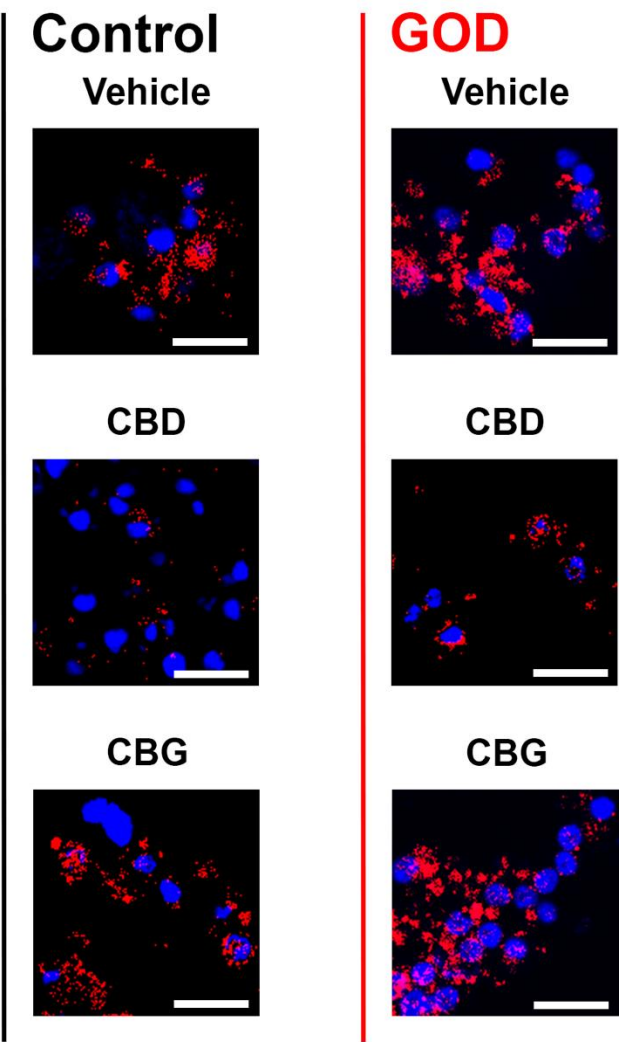
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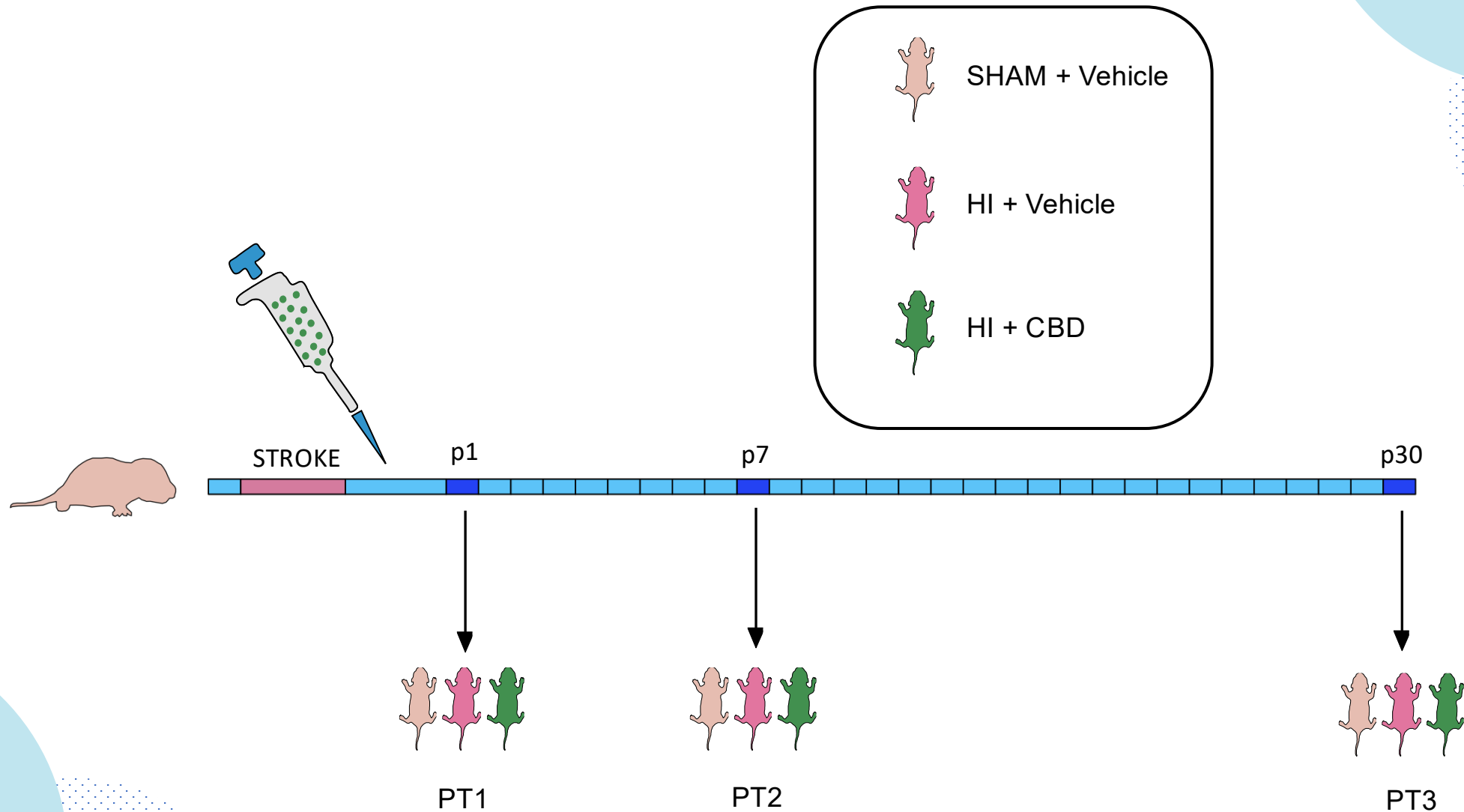
El receptor 5HT_{1A}



El rol neuroprotector del CBD en privació d'oxigen i glucosa

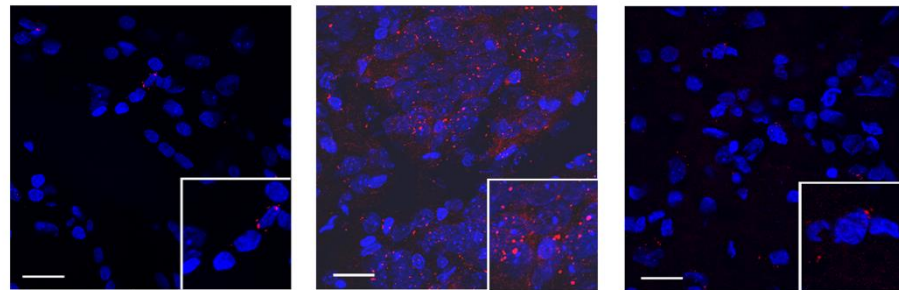


El model animal d'hipòxia isquèmica



El rol neuroprotector del CBD en el model d'hipòxia isquèmica

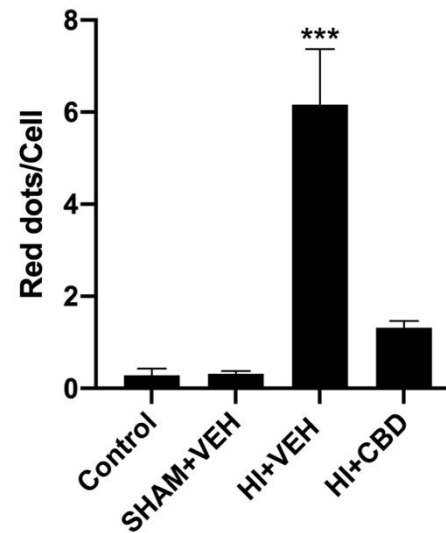
PT1



SHAM + VEH

HI + VEH

HI + CBD



SHAM + Vehicle

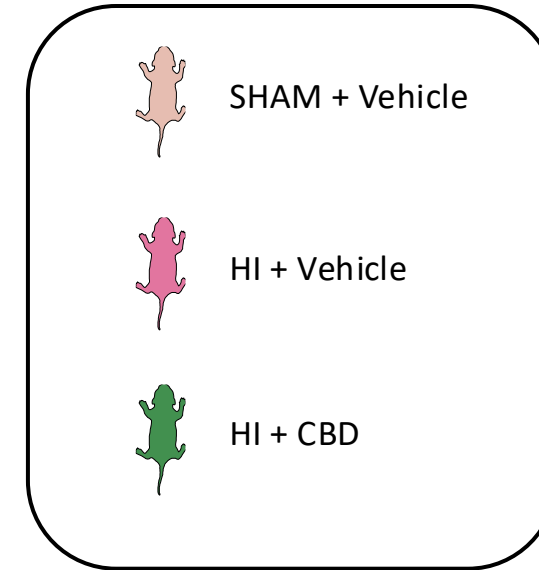
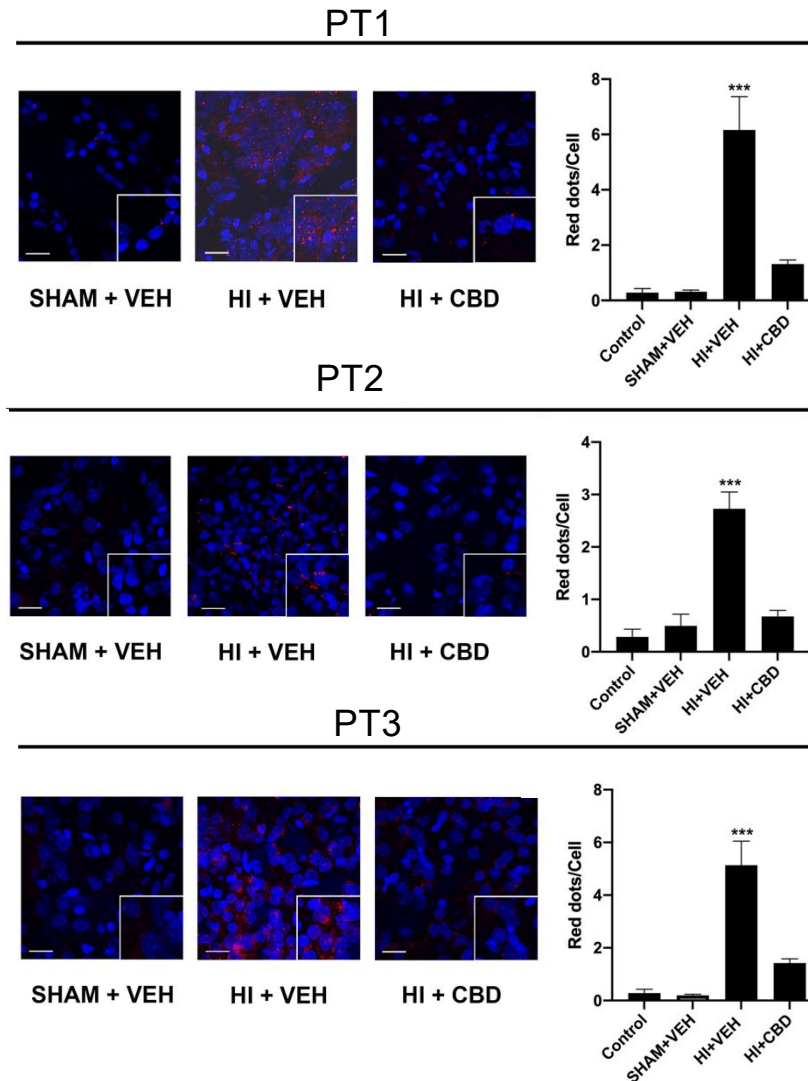


HI + Vehicle

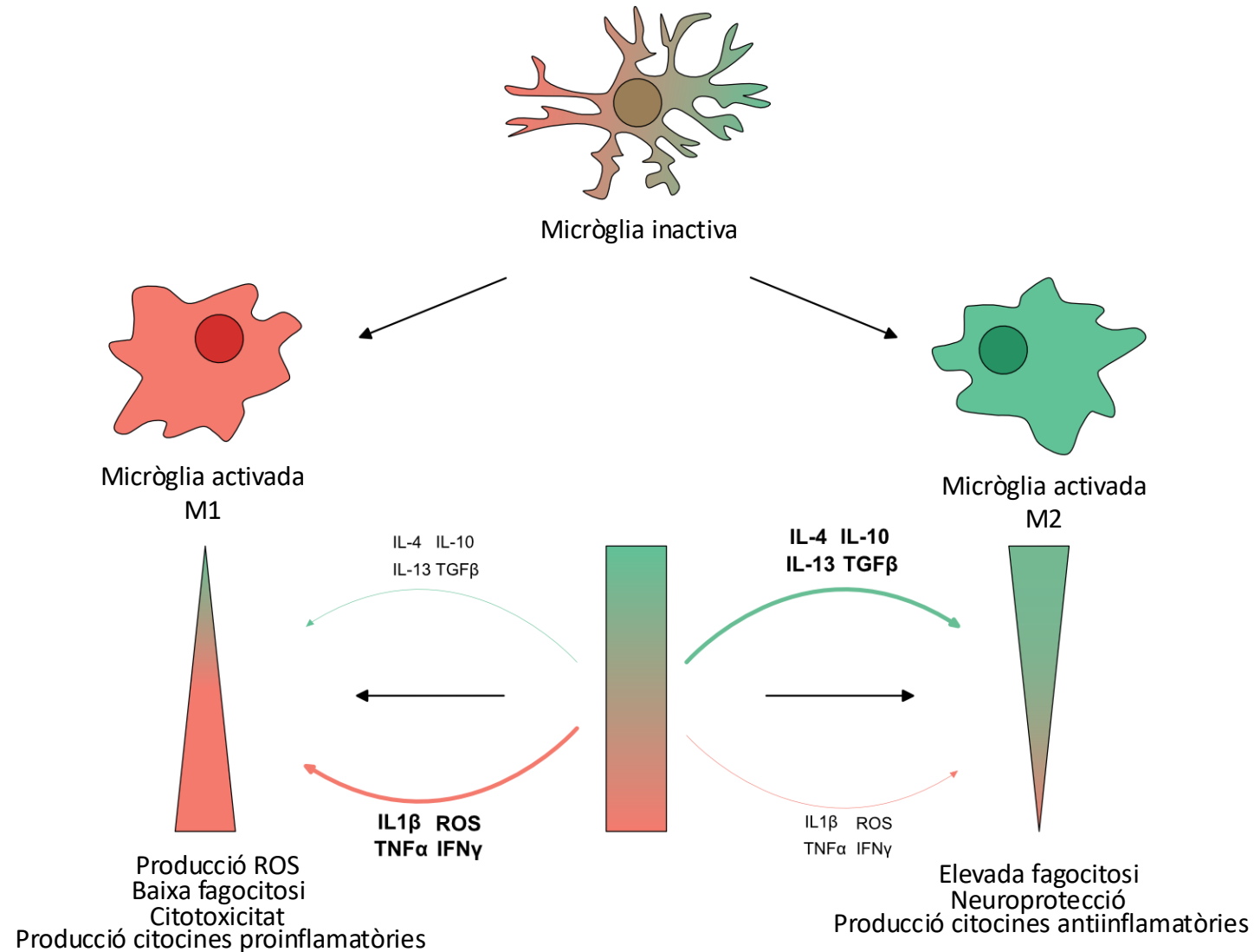


HI + CBD

El rol neuroprotector del CBD en el model d'hipòxia isquèmica

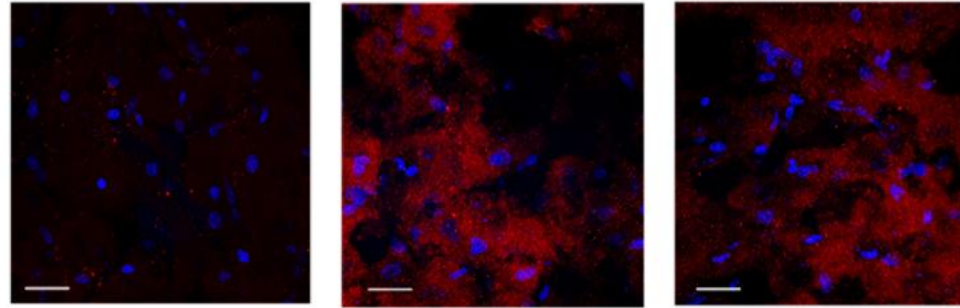


Els fenotips de la microglia activada



L'efecte del CBD sobre l'activació de la microglia

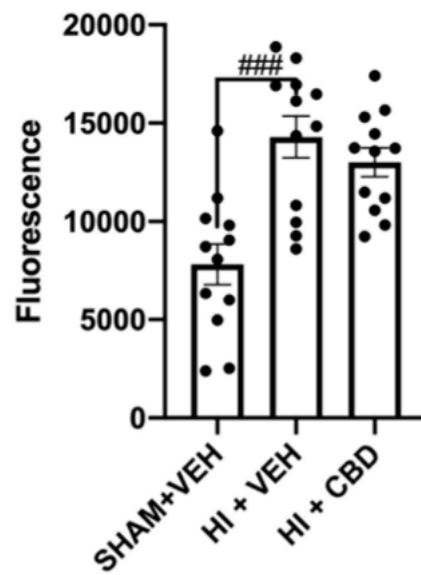
Iba1



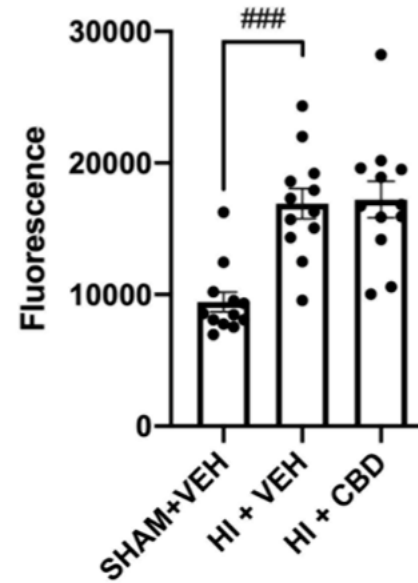
SHAM + VEH

HI + VEH

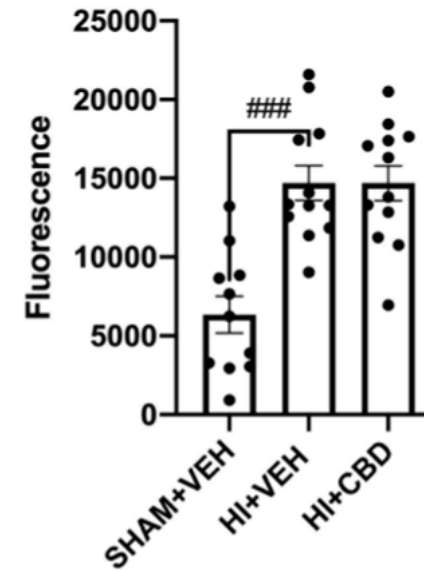
HI + CBD



PT1



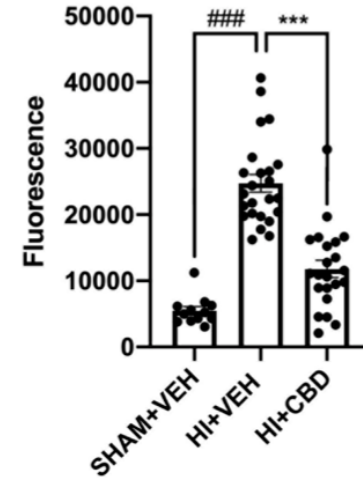
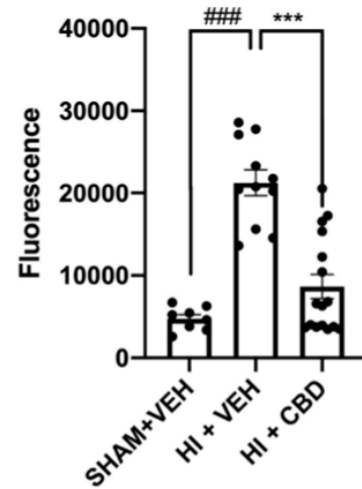
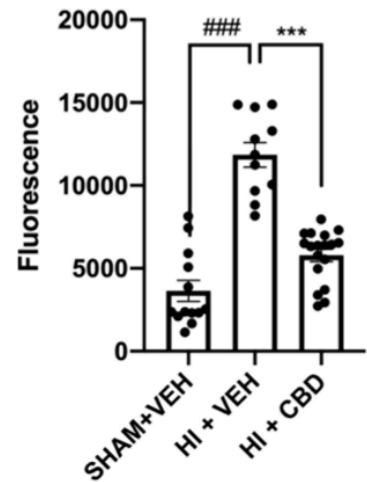
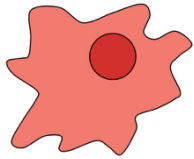
PT2



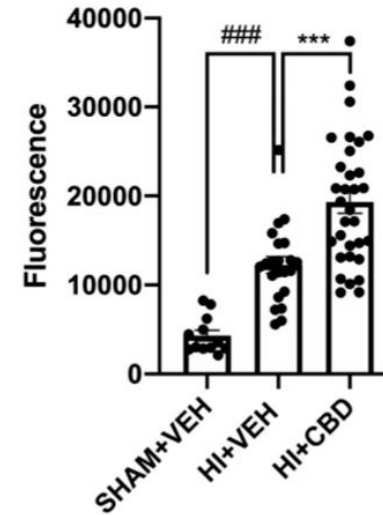
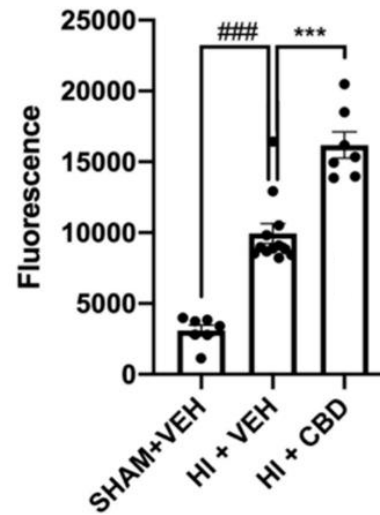
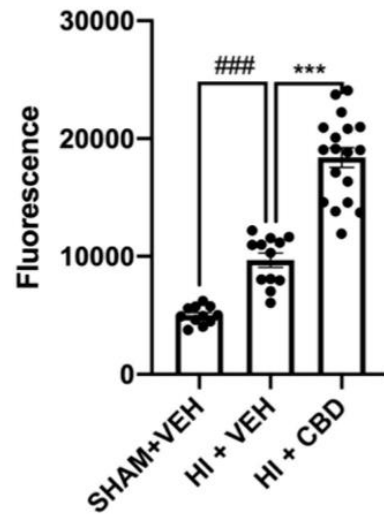
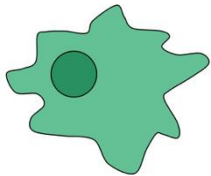
PT3

L'efecte del CBD sobre la polarització de la micròglia

iNOS



Arg I

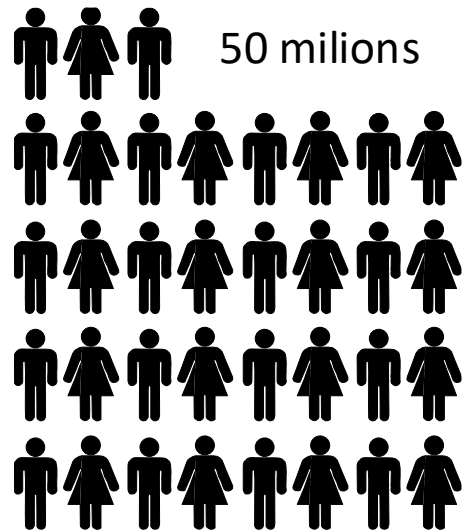


PT1

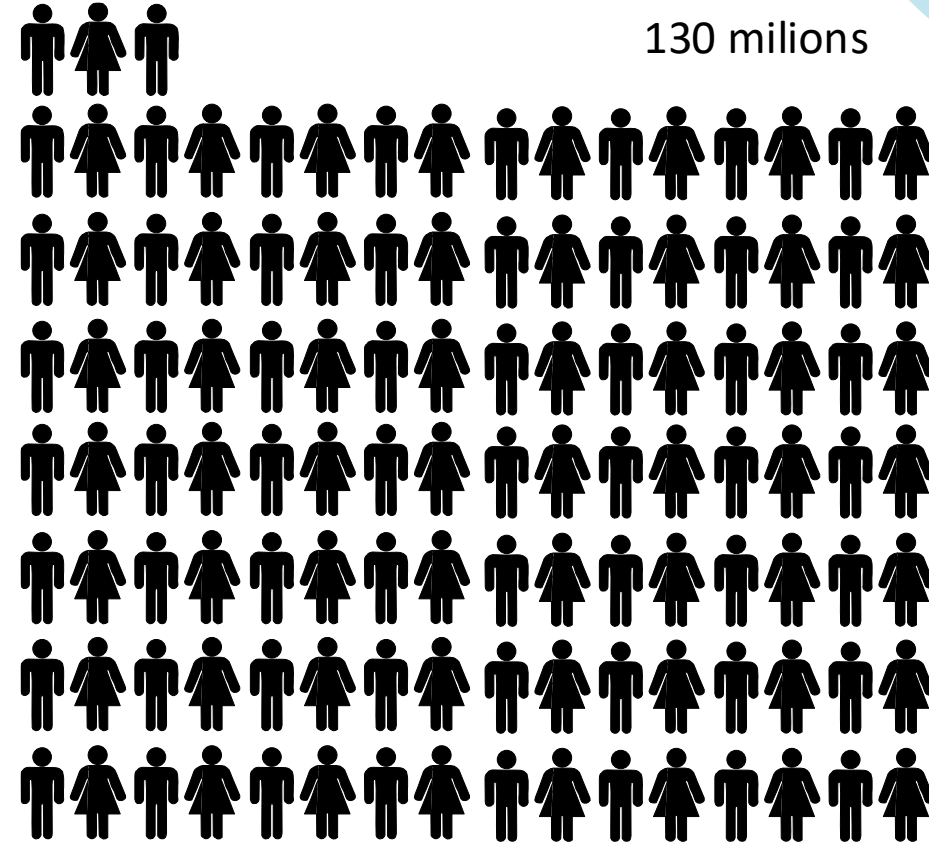
PT2

PT3

La malaltia de l'Alzheimer

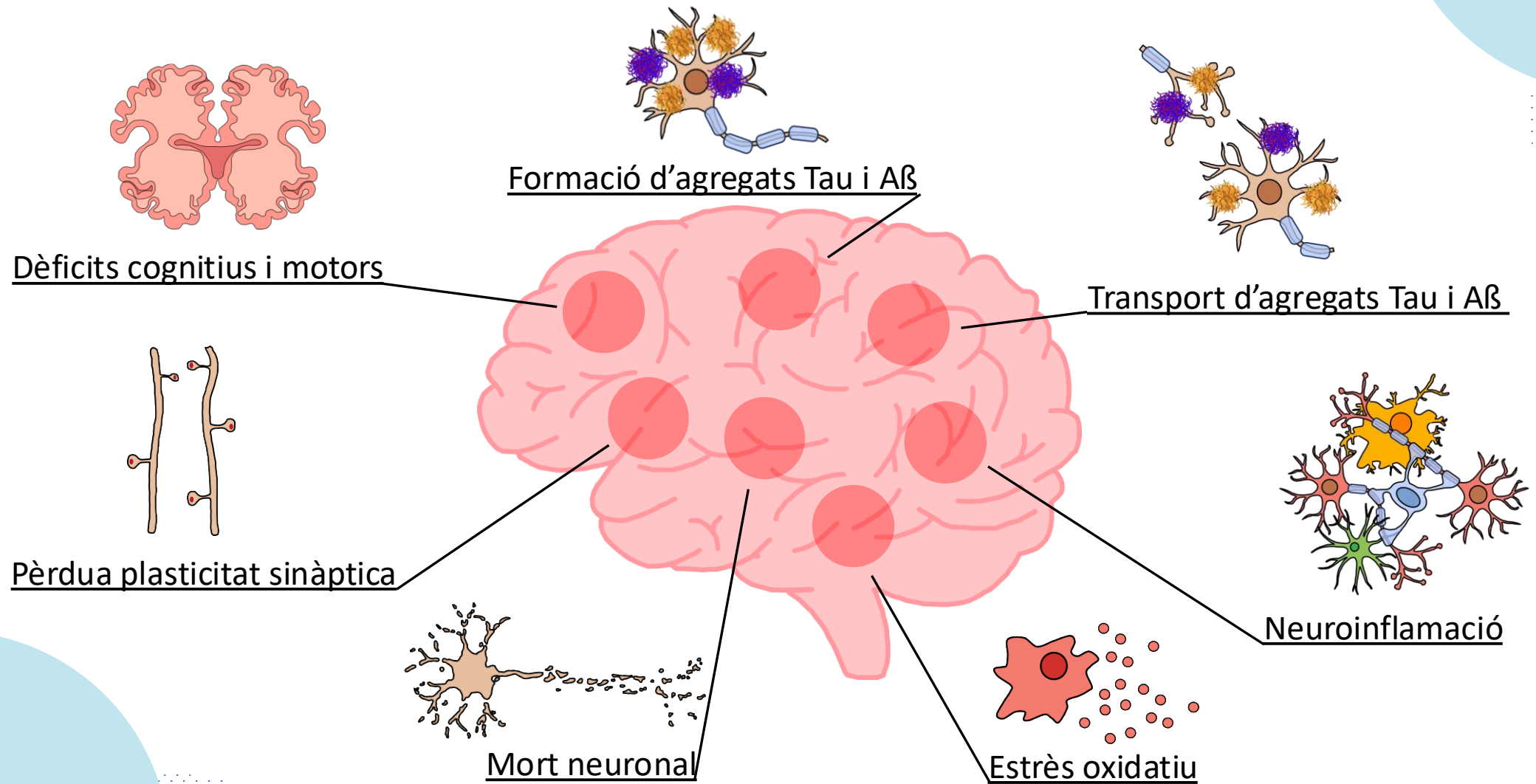


Any 2020

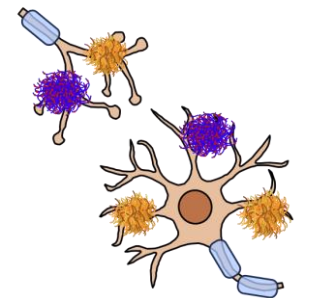
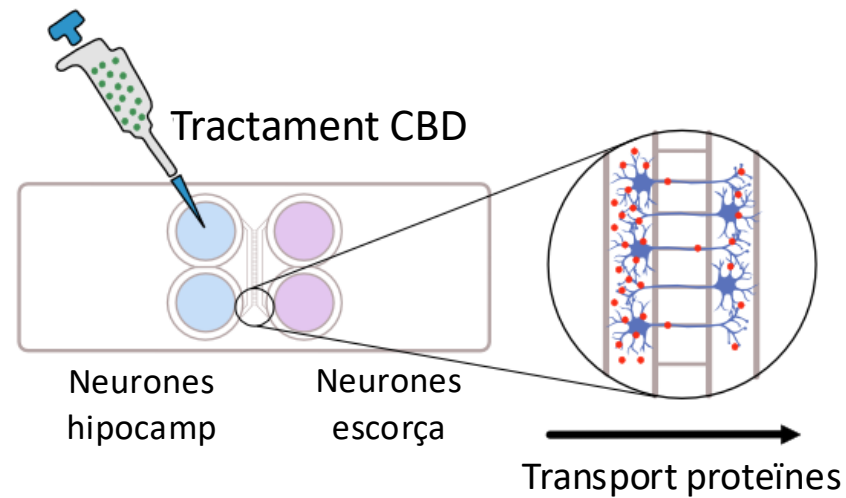
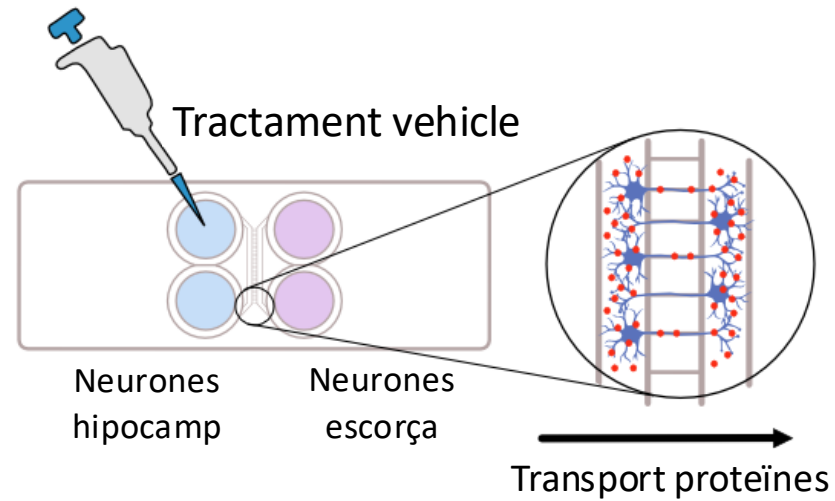
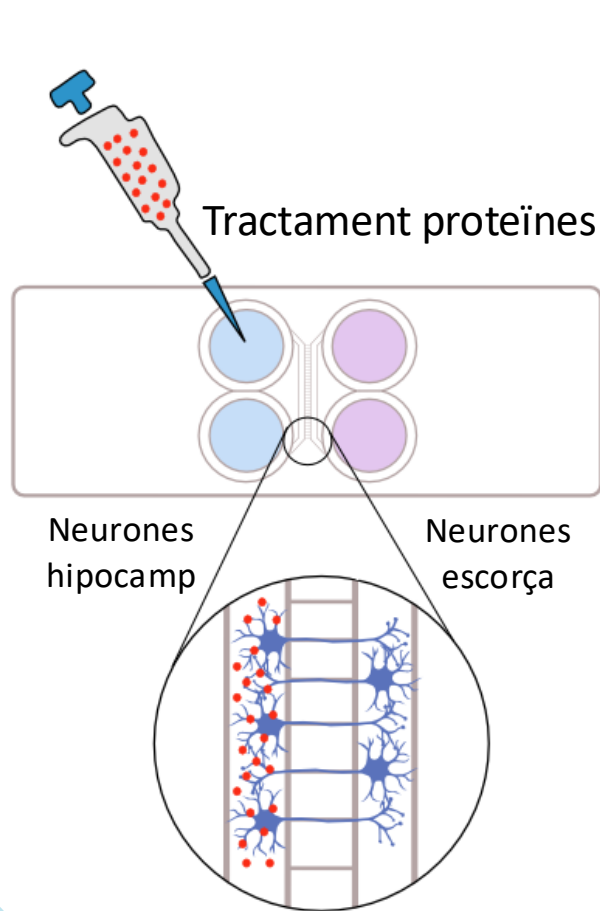


Any 2050

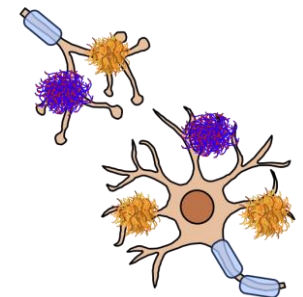
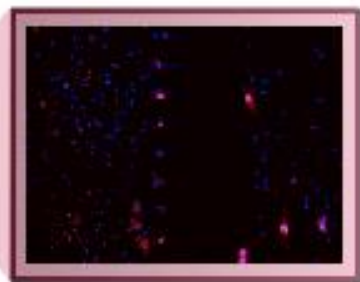
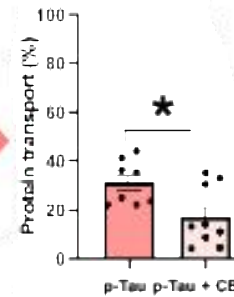
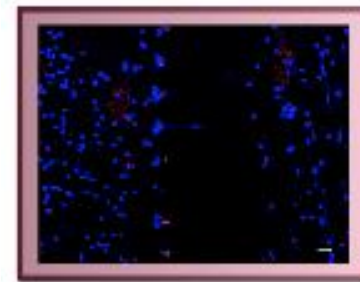
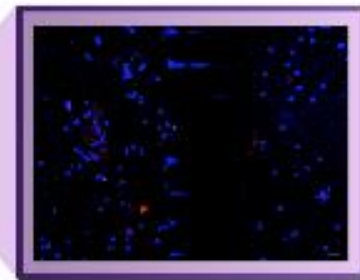
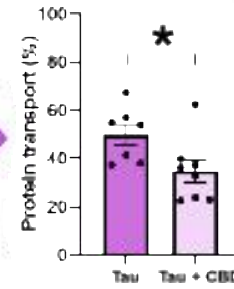
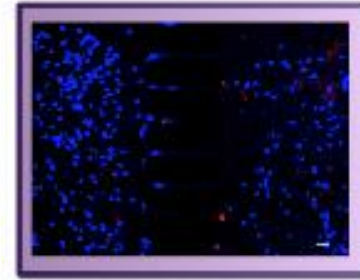
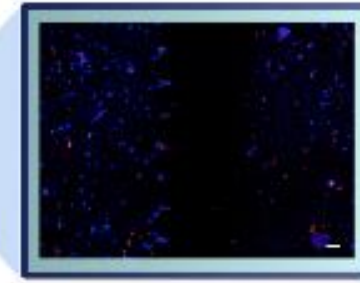
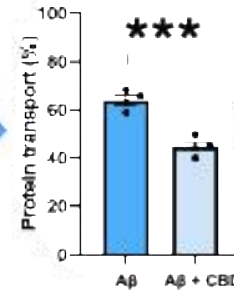
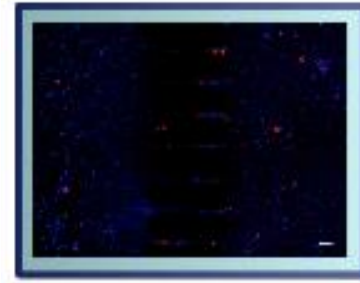
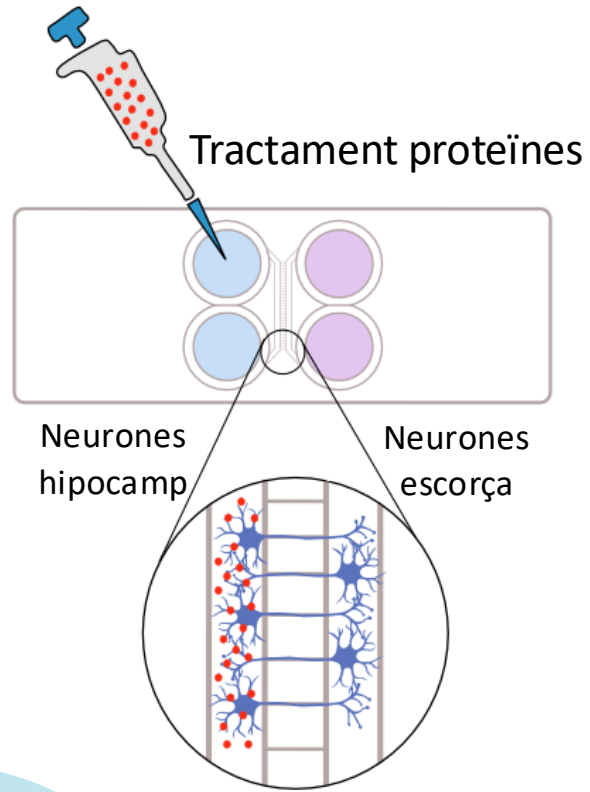
La malaltia de l'Alzheimer



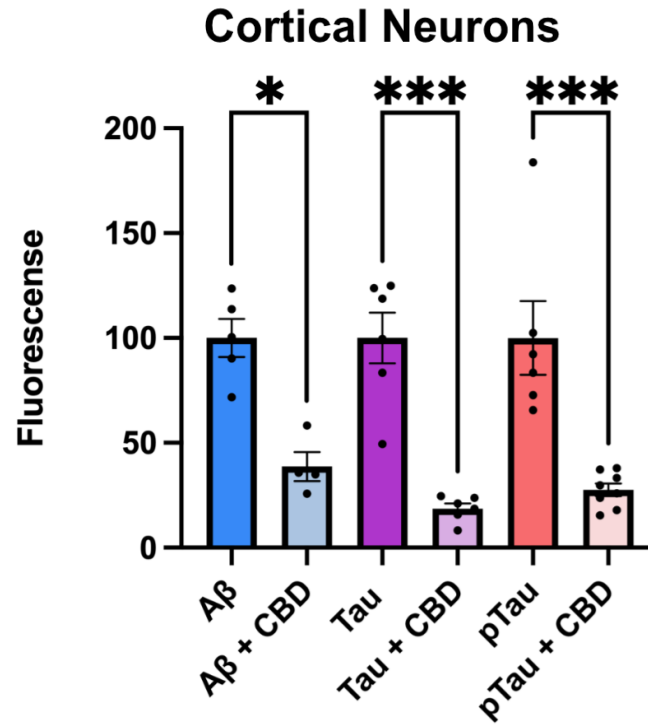
Estudi del transport axonal mitjançant xips microfluidics



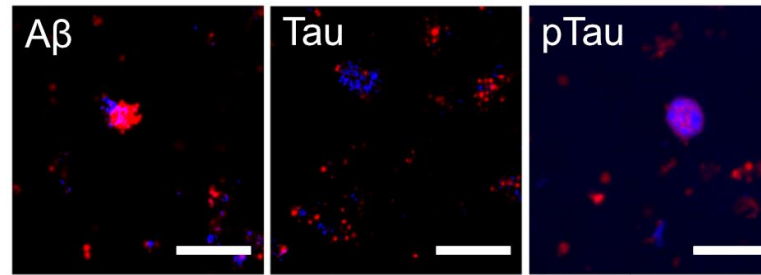
L'efecte del CBD sobre el transport axonal d'A β , Tau i pTau



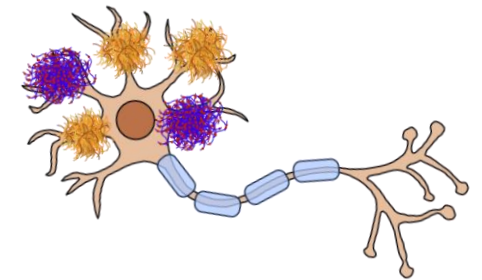
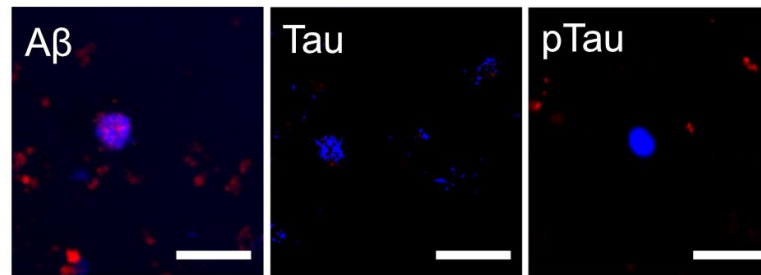
L'efecte del CBD sobre la reducció dels agregats d'A β , Tau i pTau



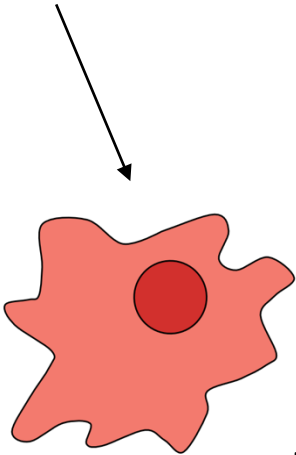
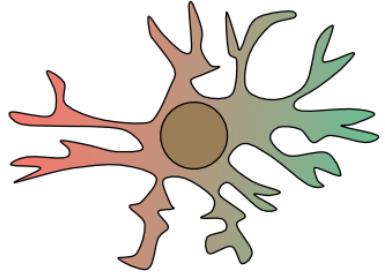
Vehicle



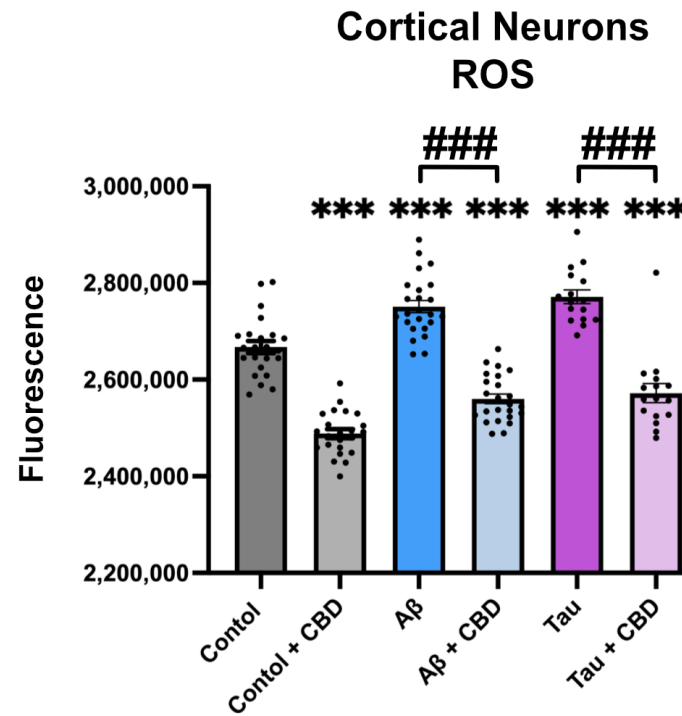
CBD



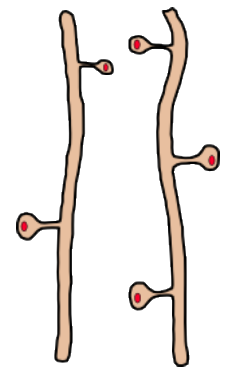
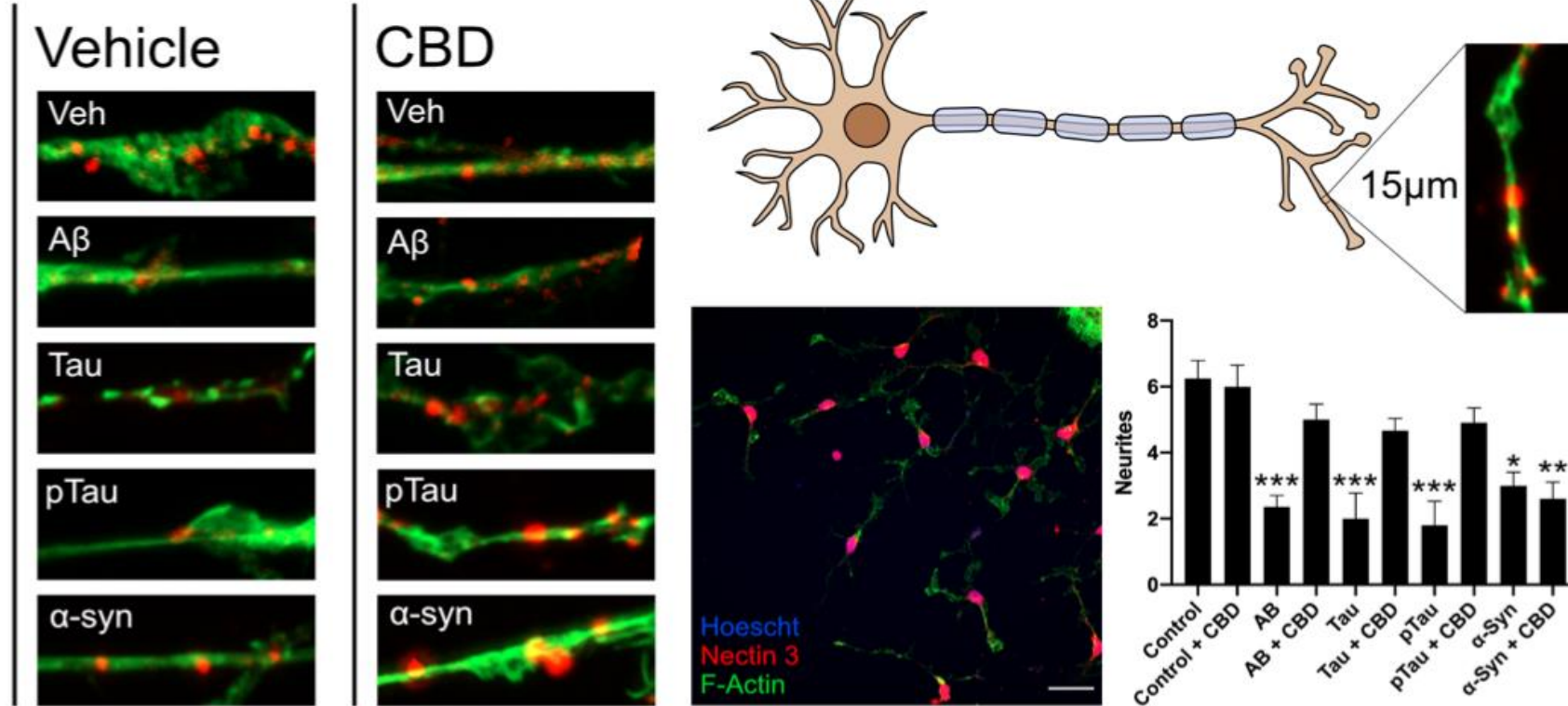
L'efecte del CBD sobre la producció d'espècies reactives d'oxigen



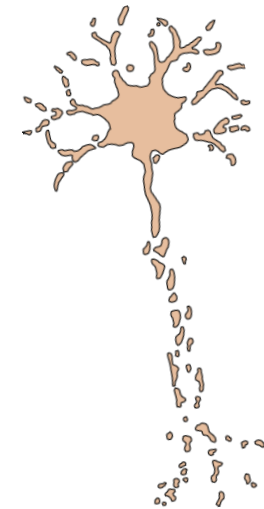
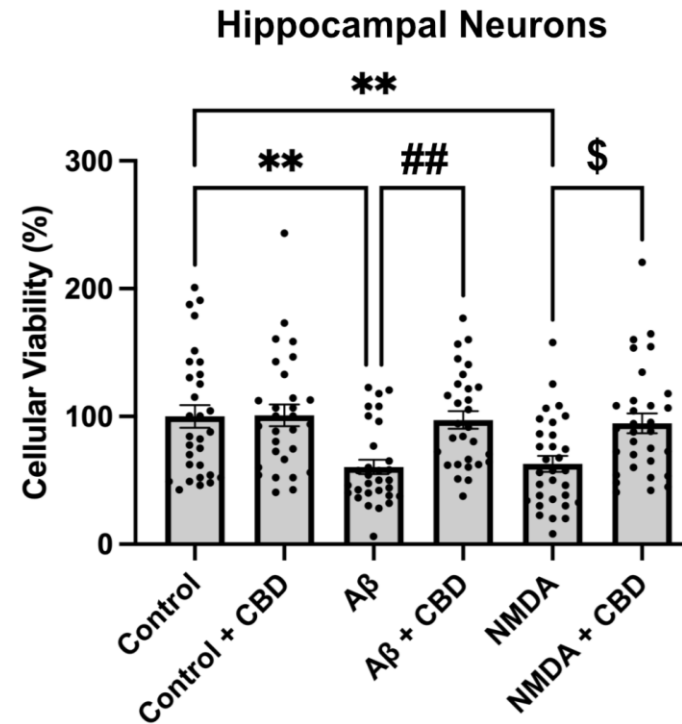
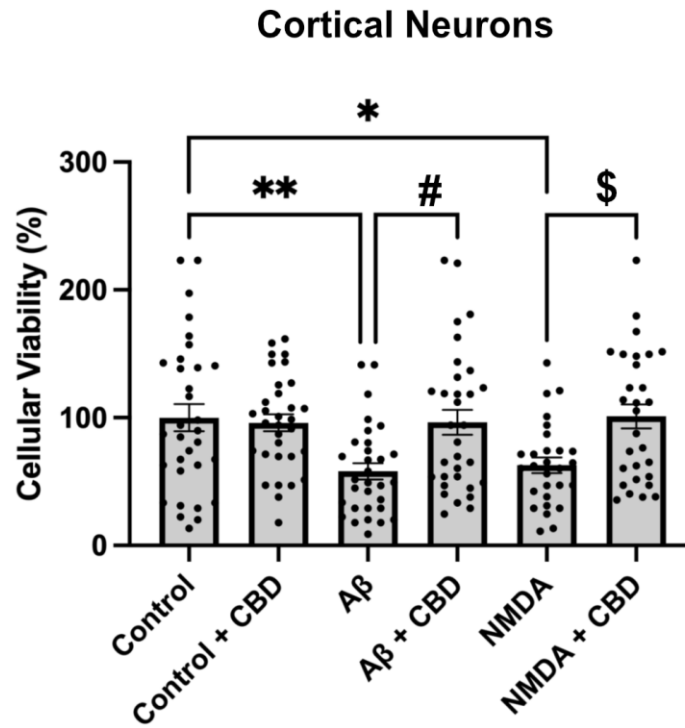
Producció de ROS
Estrès oxidatiu



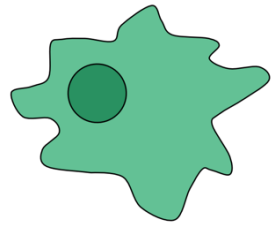
L'efecte del CBD sobre la formació de neurites



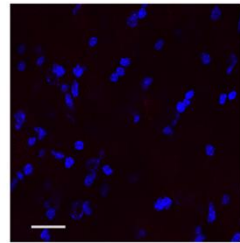
Efecte del CBD sobre la viabilitat cel·lular



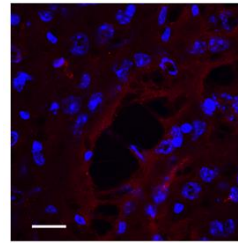
L'efecte del CBD sobre la polarització de la microglia



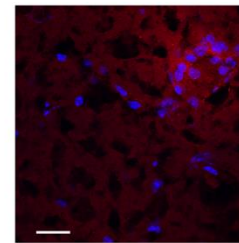
Arginase I



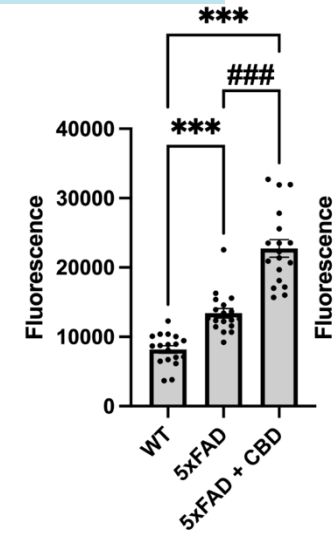
WT



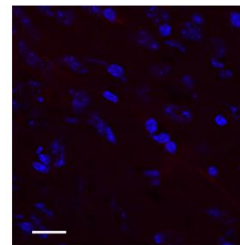
5xFAD



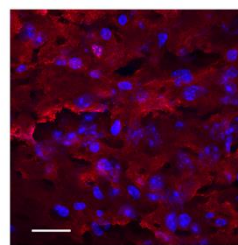
5xFAD + CBD



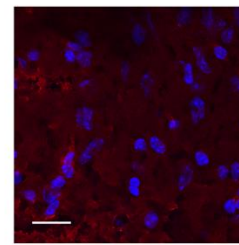
iNOS



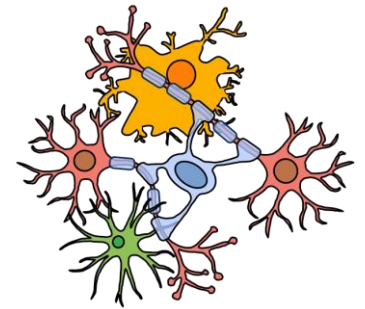
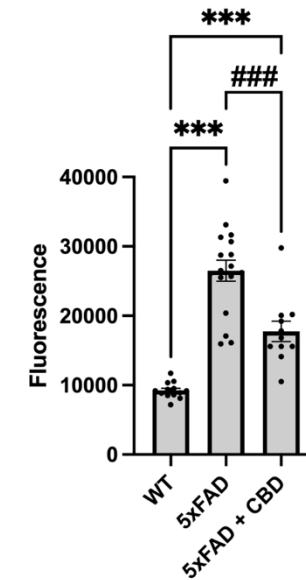
WT



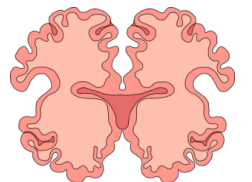
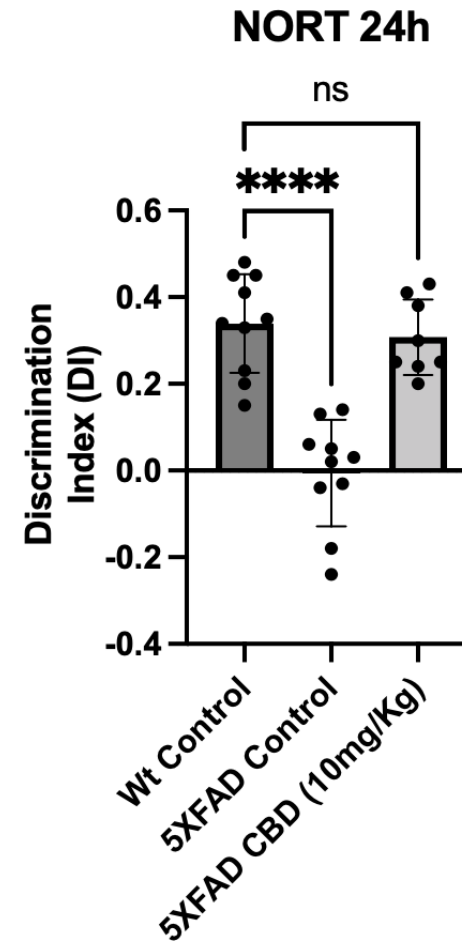
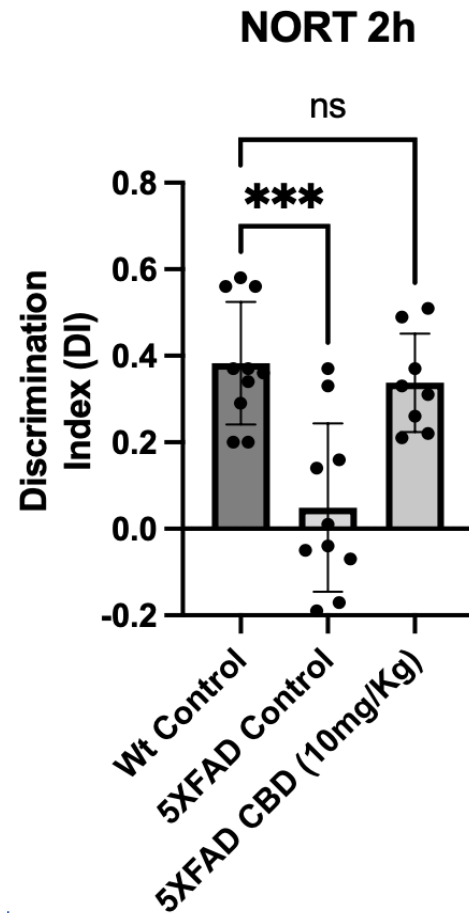
5xFAD



5xFAD + CBD



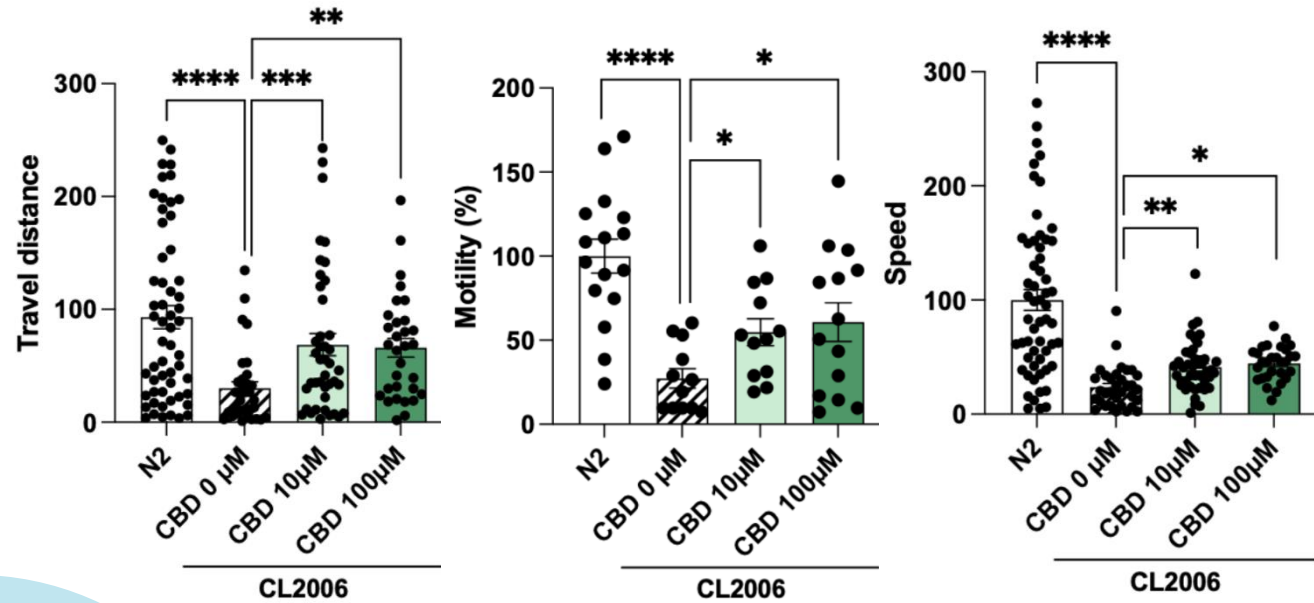
L'efecte del CBD sobre la memòria espacial



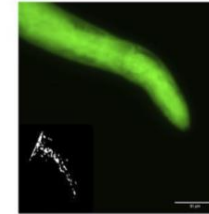
L'efecte del CBD sobre la capacitat locomotora en *C. elegans*



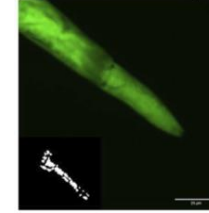
C. elegans



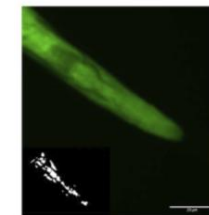
CL2006 CBD 0 μM



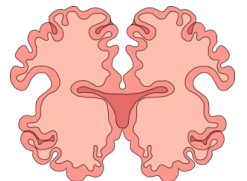
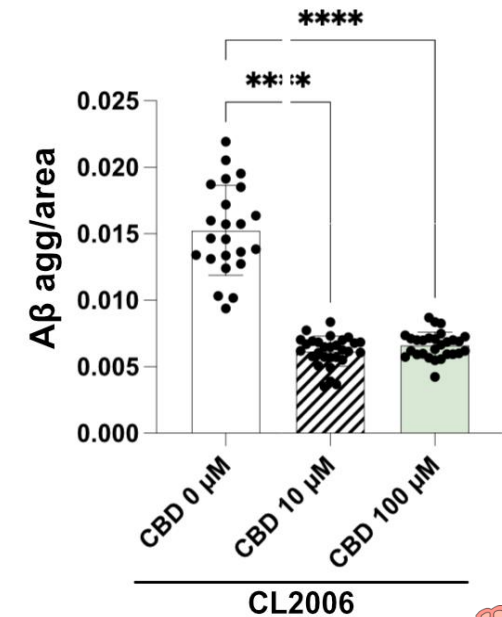
CL2006 CBD 10 μM



CL2006 CBD 100 μM



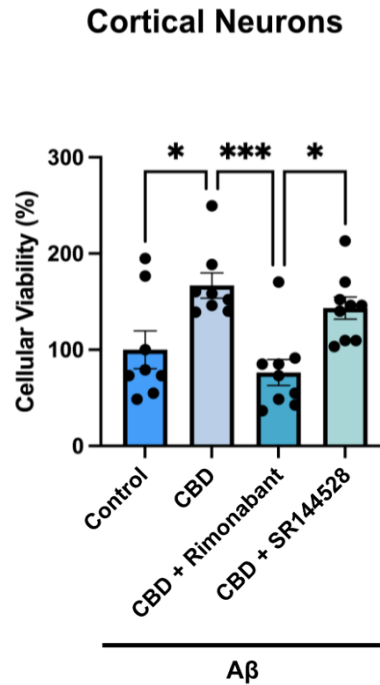
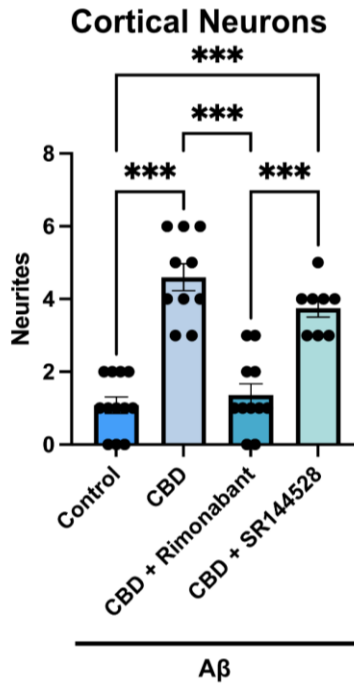
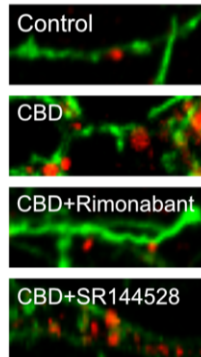
Thioflavin S staining



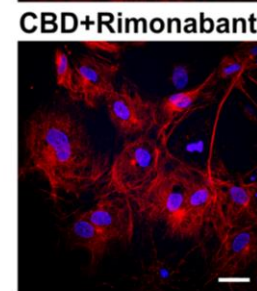
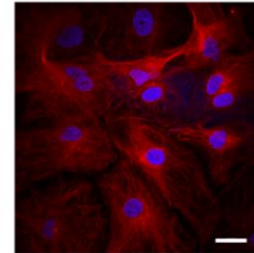
L'efecte neuroprotector del CBD es mediat per receptors cannabinoides

Rimonabant	Antagonista de CB ₁ R
SR144528	Antagonista de CB ₂ R

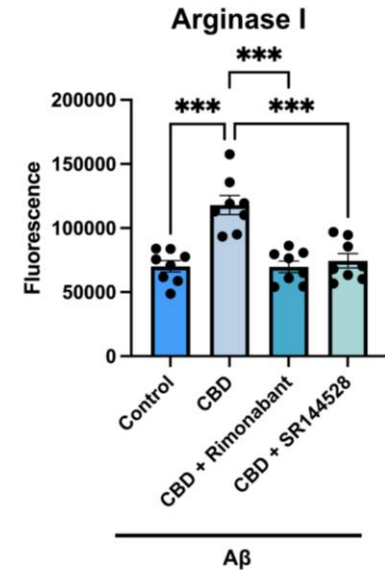
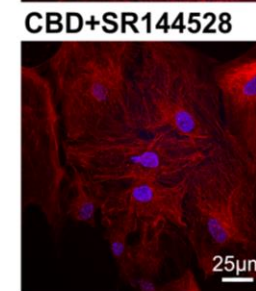
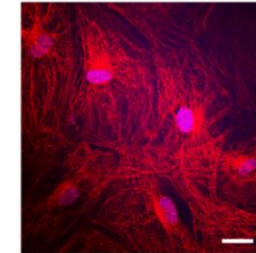
A β



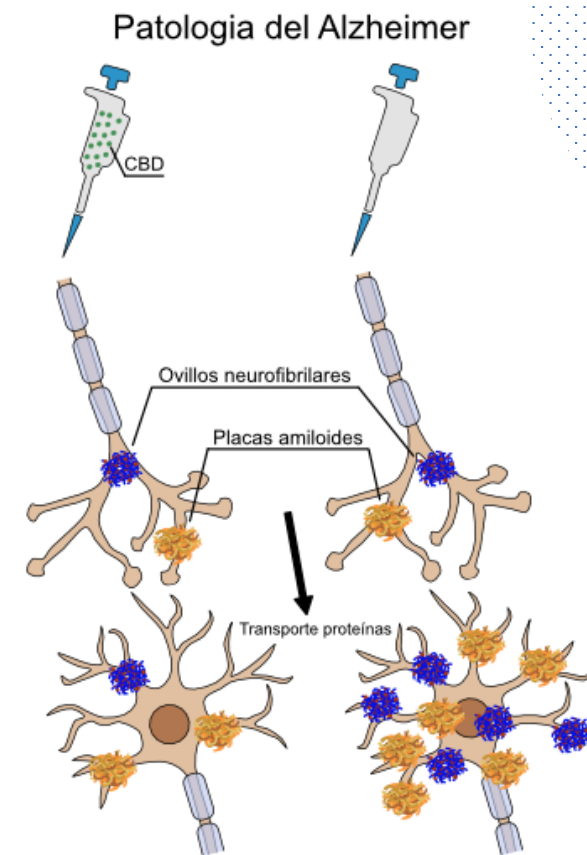
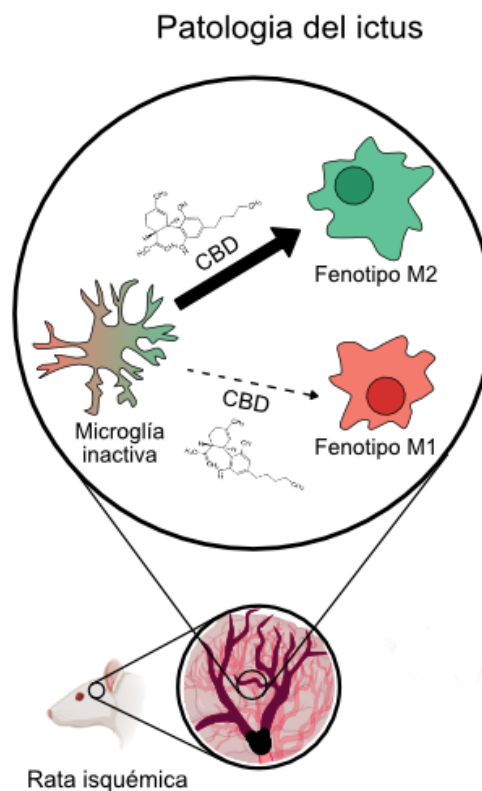
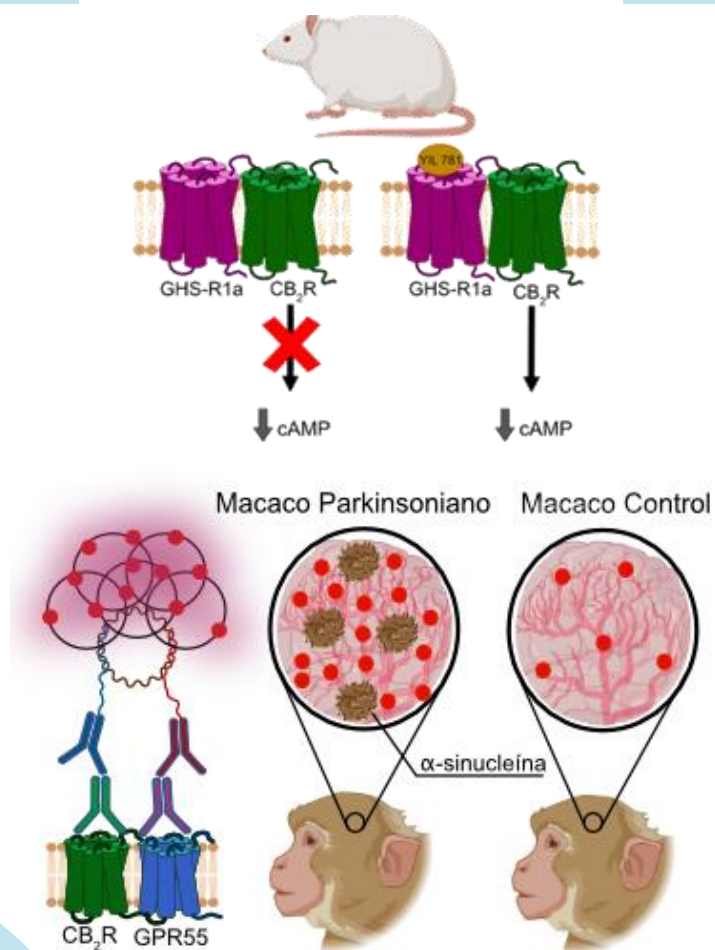
Control



CBD



Ideas per endur a casa

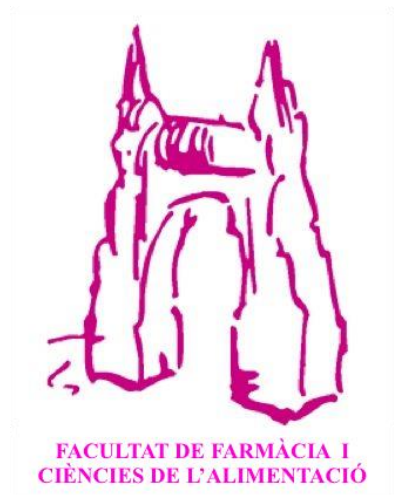


Noves evidències de l'efecte neuroprotector del Sistema Cannabinoide a nivell del Sistema Nerviós Central



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Curs 2025-2026



Jaume Lillo Jové