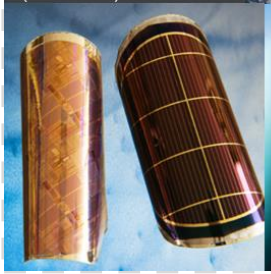
EVENTO DE NETWORKING

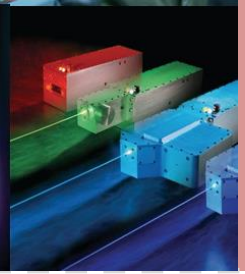
HEALTHCARE & PHOTONICS

TECNOLOGIAS FOTÓNICAS APLICADAS AL SECTOR HEALTHCARE

26 MARZO/14

09.45h-17.00h
Parc Audiovisual de Catalunya
Carretera BV-1274, Km.1, 08225 Terrassa (Barcelona)





INSTITUT PERE MATA Àrea de Recerca

ICIQ

IISPV INSTITUT D'INVESTIGACIÓ SANITÀRIA PERE VIRGILI

Desarrollo de nanoesferas con propiedades ópticas y su aplicación en la detección de marcadores biológicos en enfermedades mentales

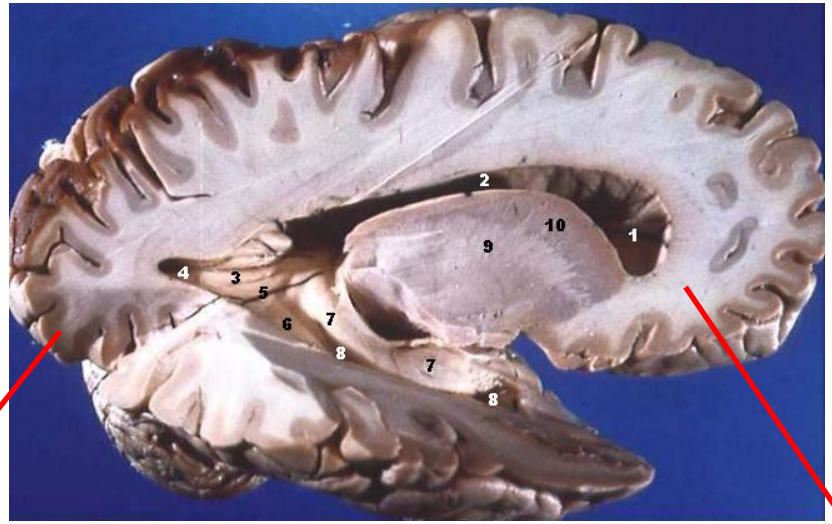
Reto

Enfermedades mentales graves, crónicas, neurodegenerativas como:

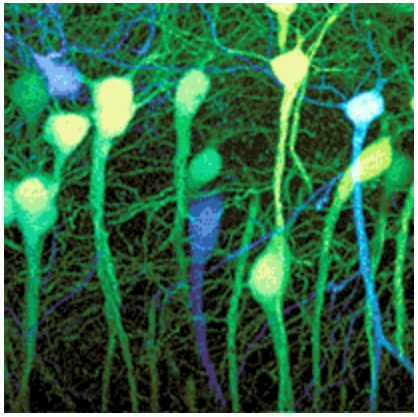
esclerosis múltiple (1/1000)
esquizofrenia (1/100)
el trastorno bipolar (2/100)

son causadas en parte por una disfunción de la mielina o sustancia blanca del cerebro.

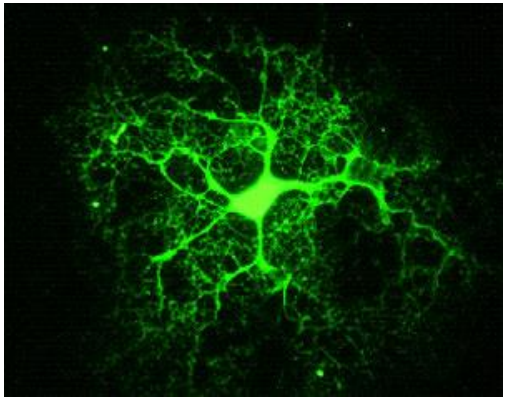
Reto



SUSTANCIA GRIS
Cuerpo neuronas



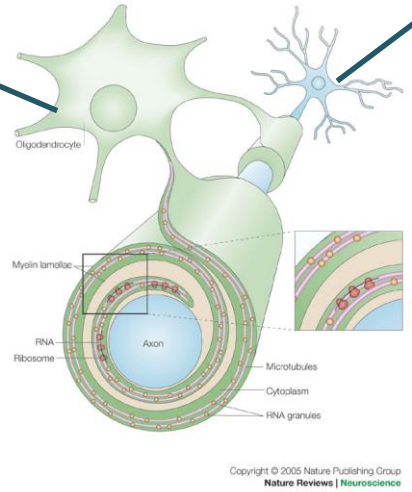
SUSTANCIA BLANCA O MIELINA
axones+oligodendrocitos



Reto

neurona

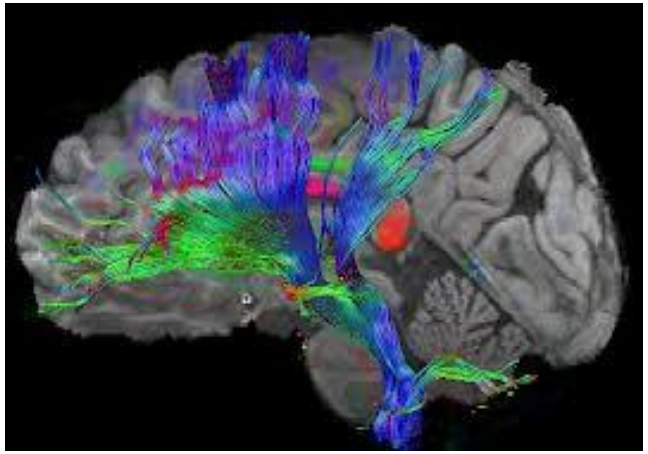
oligodendrocito



Reto

Detectar defectos en la mielina y poderlos reparar

¿Como analizar *in vivo* marcadores biológicos de mielina?

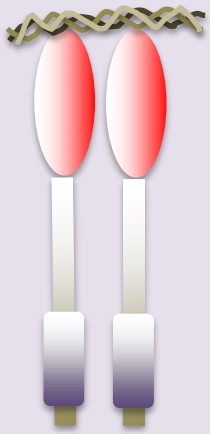


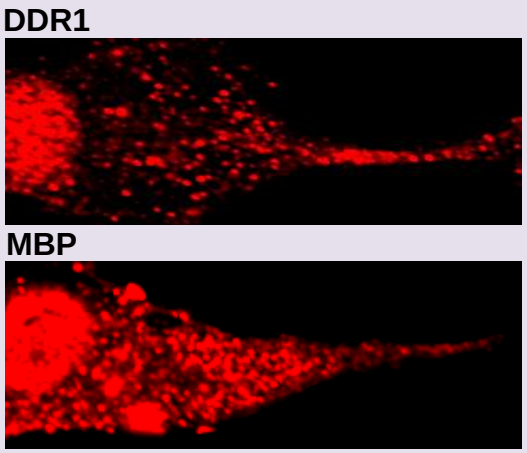
Idea

Quantum dots (QDs) nanocristales semiconductores con propiedades ópticas y eléctricas

Desarrollo de la idea

Biomarcador de mielina: **DDR1**





Oligodendrocitos humanos (HOG16)

Neuroscience 140 (2006) 463–475

EXPRESSION OF DISCOIDIN DOMAIN RECEPTOR 1 DURING MOUSE BRAIN DEVELOPMENT FOLLOWS THE PROGRESS OF MYELINATION

N. FRANCO-PONS,[a,b] C. VIRGOS,[b] W. F. VOGEL,[c] J. M. UREÑA,[d] E. SORIANO,[d] J. A. DEL RIO[d] AND E. VILELLA[a,b]*

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Key words: carnosine, discoidin domain, myelin, oligodendrocytes.

Tyrosine kinase receptors (RTKs) are important mediators of intracellular signal transduction pathways that govern growth, differentiation and developmental signals (Blume-Jensen and Hunter, 2001). Discoidin domain receptors, DDR1 and DDR2, are a novel subfamily of RTKs. In their extracellular region both contain a discoidin domain, a homology region that was first described in the lectin discoidin I from the slide mold *Dictyostelium discoideum* (Springer et al., 1984). Other proteins that contain the

BRAIN RESEARCH 1336 (2010) 22–29

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BRAIN RESEARCH

Research Report

Expression of the tyrosine kinase discoidin domain receptor 1 (DDR1) in human central nervous system myelin

Bàrbara Roig[a], Neus Franco-Pons[a], Lourdes Martorell[a], Jordi Tomàs[a], Wolfgang F. Vogel[b,†], Elisabet Vilella[a,]*

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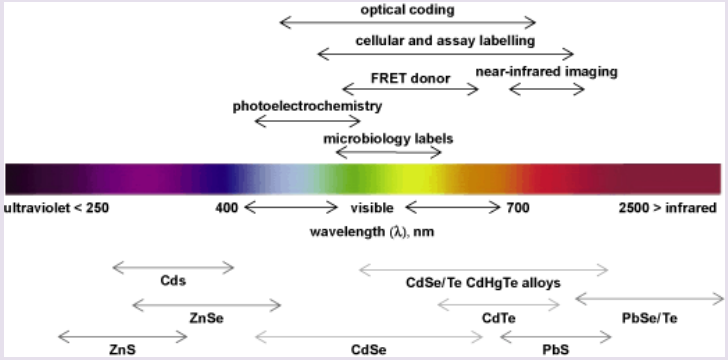
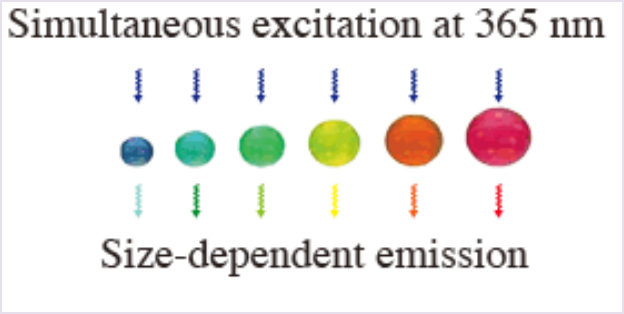
[b]*Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, Ontario, Canada M5S 1A8*

Desarrollo de la idea

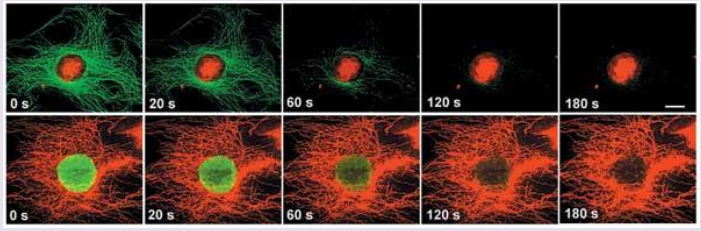
QDs: Espectro de emisión estrecho y sintonizable dependiente de tamaño)



QDs: Una sola fuente de exitación lumínica para QDs de diferentes colores

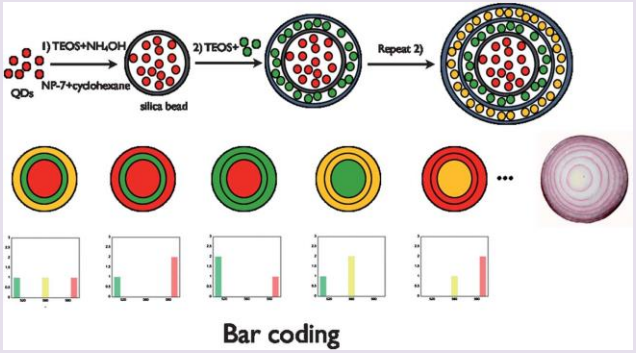


QDs: Más brillo (20x) y fotoestabilidad (100x) que los colorantes orgánicos convencionales



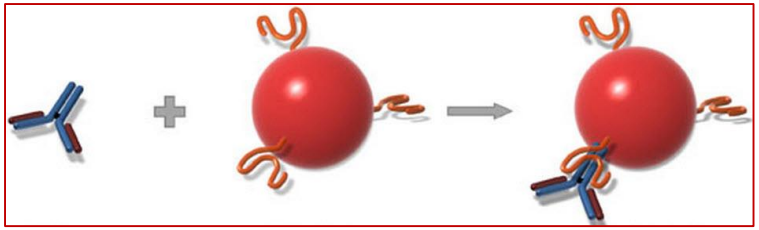
Nat. Rev. Neurosci. 2003, 4, 163; Int. J. Mol. Sci. 2009, 10, 441

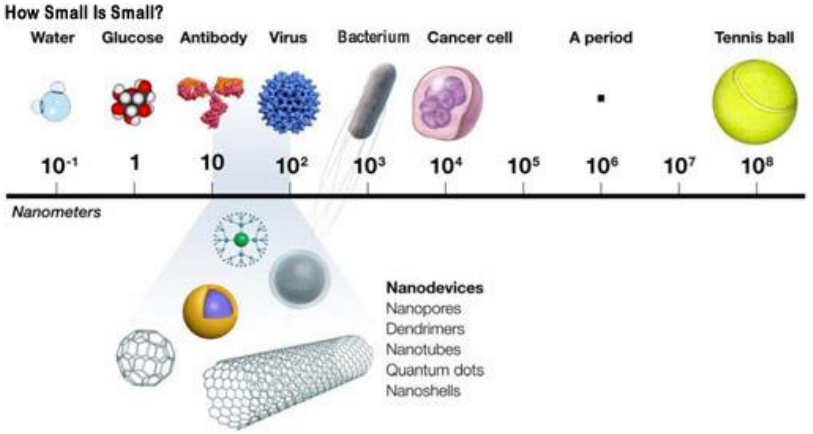
QDs: permiten multiplexar la detección (código de barras o método *coktail)*

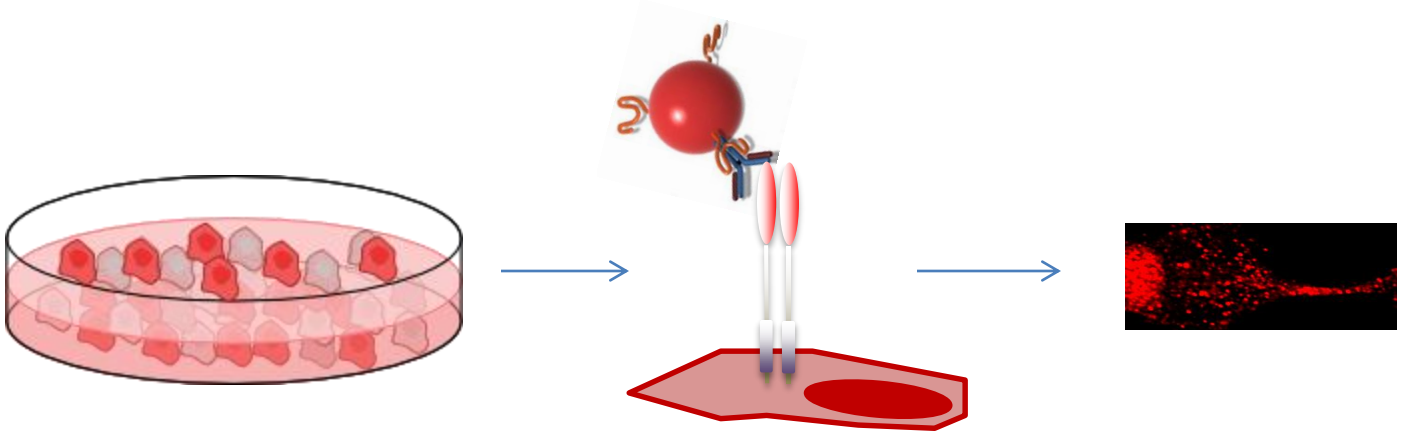


Chem. Comm. 2011, 47, 7071; J. Mater. Chem. 2011, 21, 17673

Metodología



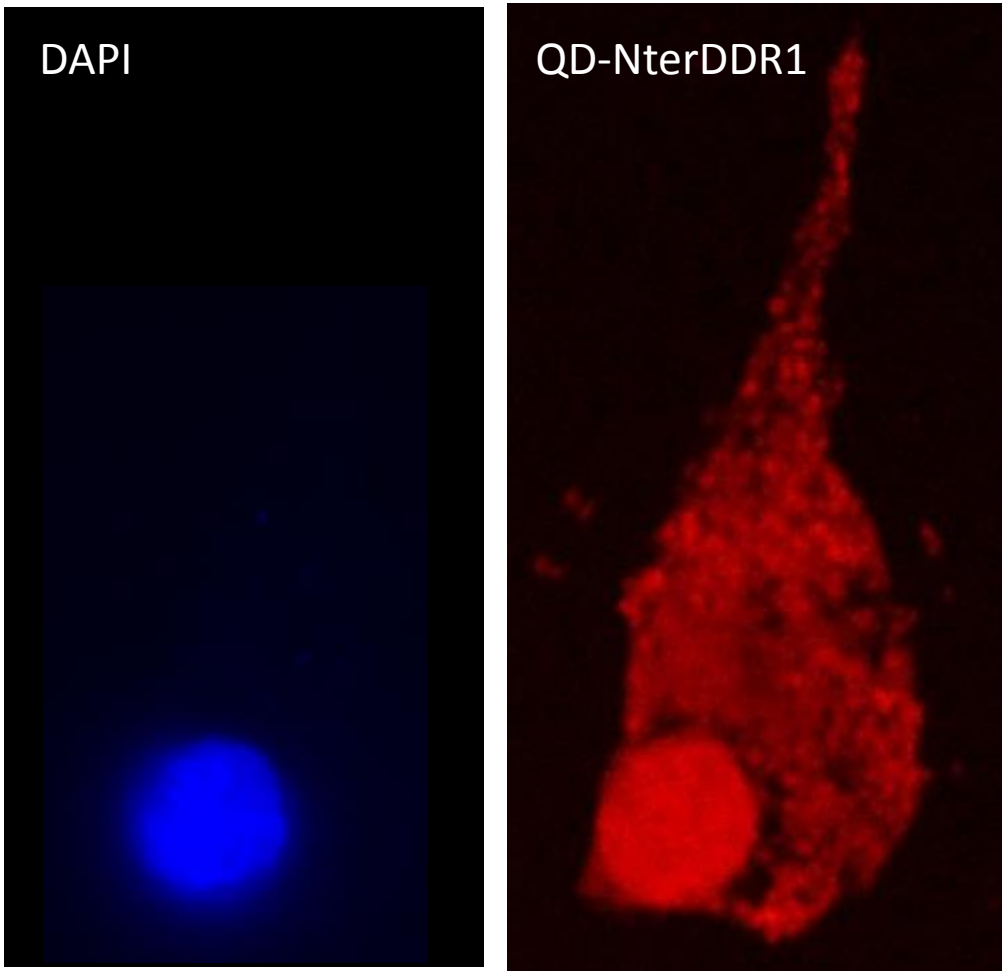




Resultados preliminares

QD-Si-APS-N-terminal_21-54aaDDR1

Clutivo de oligodendrocitos humanos (HOG16)



Dónde estamos

Grup de genètica i ambient en les psicosis

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Tarragona