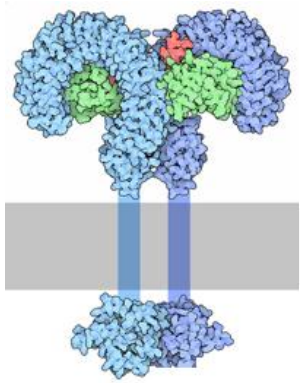
RECONOCIMIENTO

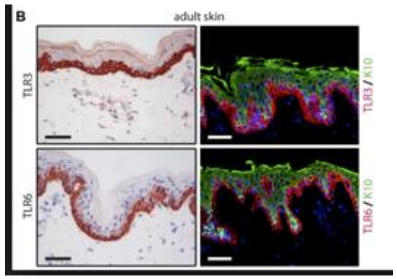
RESPUESTA

LA INMUNIDAD INNATA

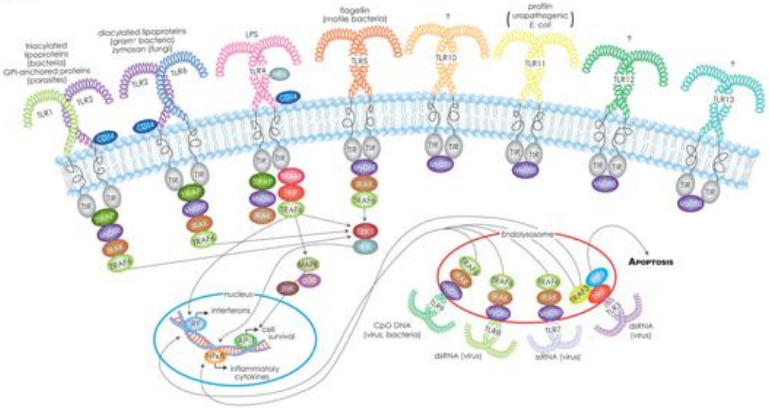


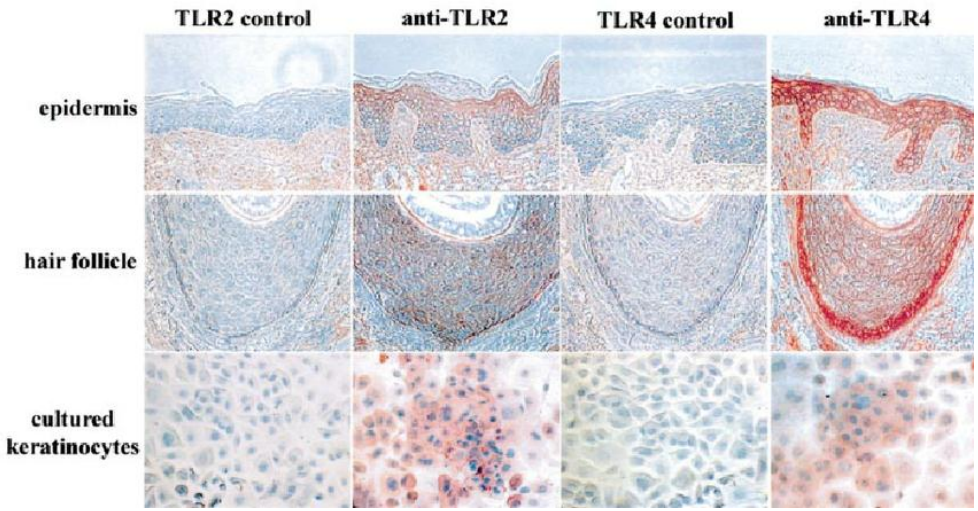
RECEPTORES TOLL

PRESENTES EN CASI TODAS LAS CÉLULAS

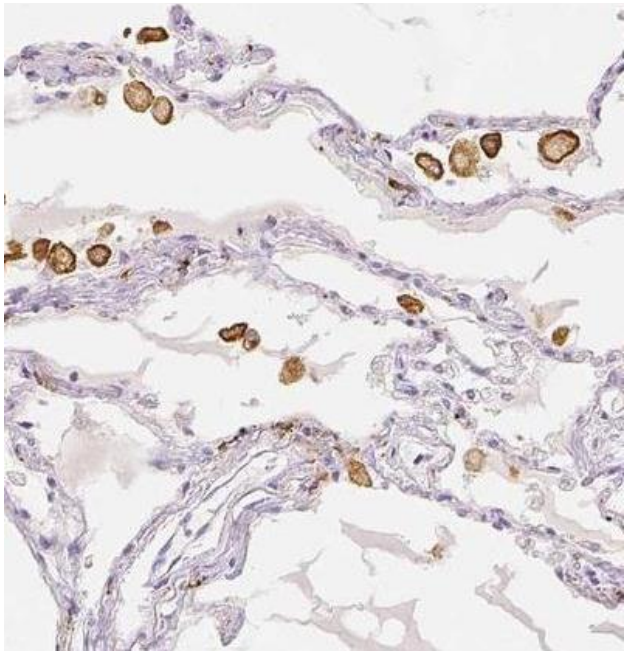


Cada tipo celular responderá en función de sus propias capacidades





RECEPTOR DE MANOSA EN PULMÓN

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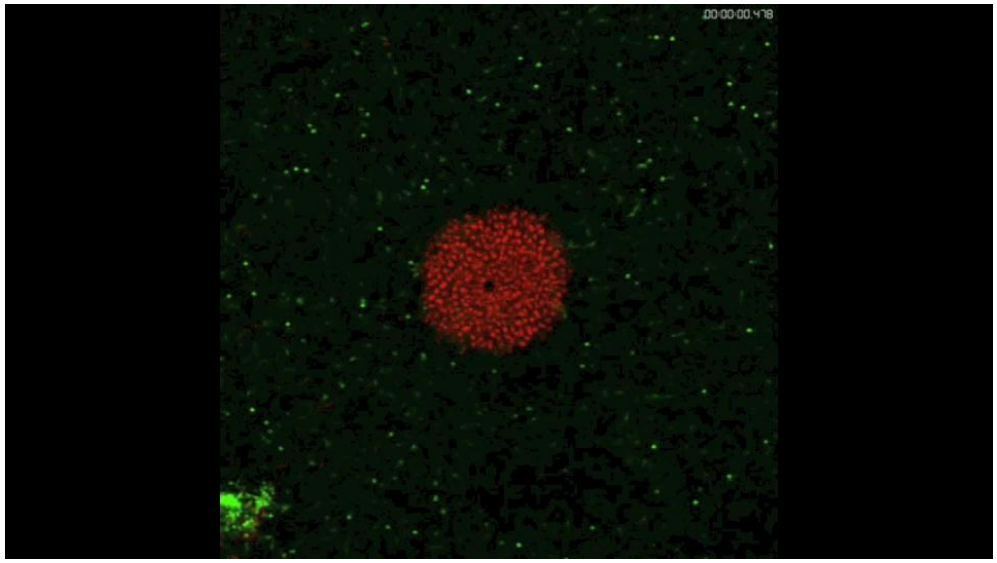


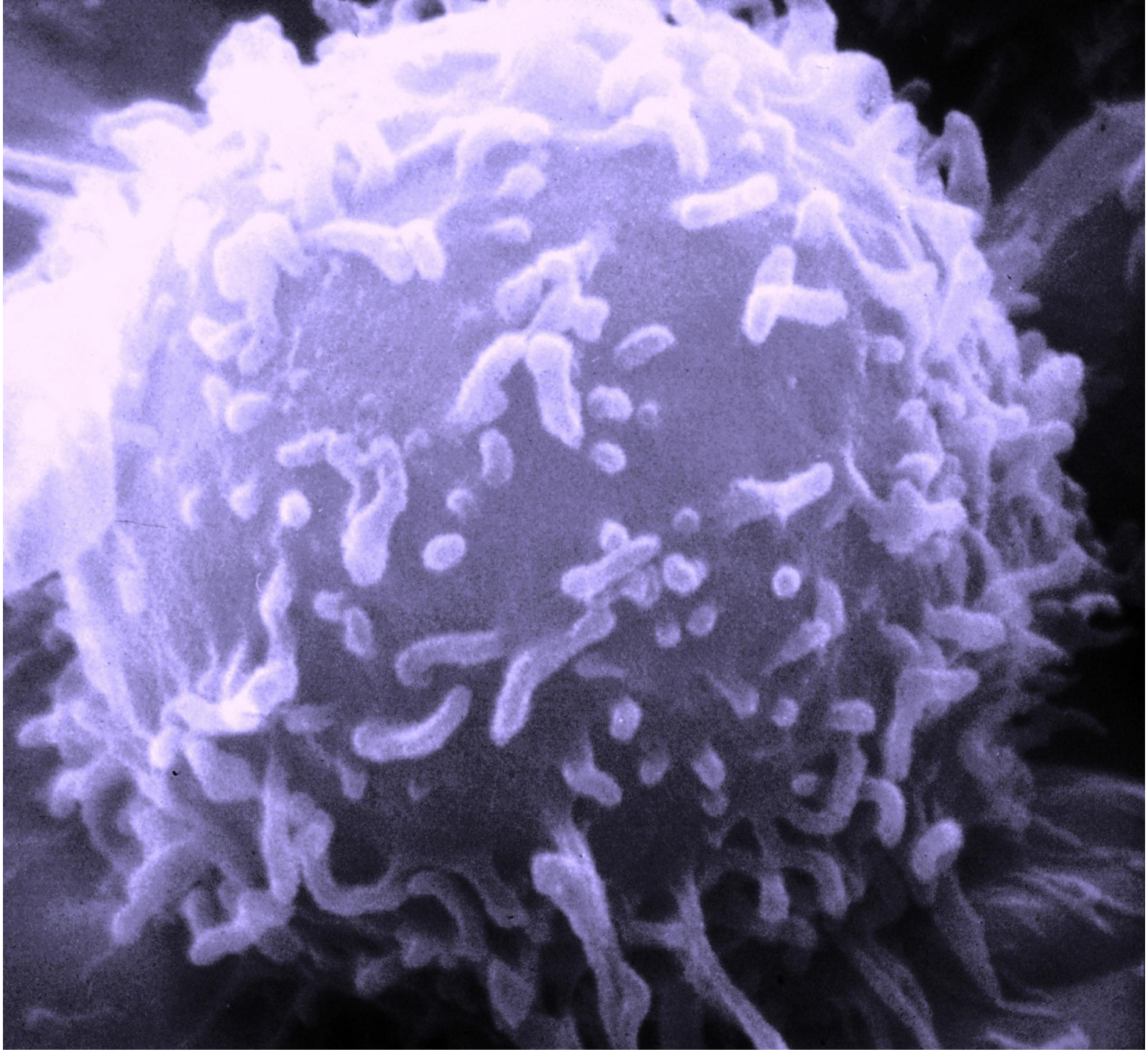
¿ QUÉ RECONOCEN LAS CÉLULAS DE LA INMUNIDAD INNATA?

PATRONES MOLECULARES ASOCIADOS A PATÓGENOS

PATRONES MOLECULARES ASOCIADOS A DAÑO

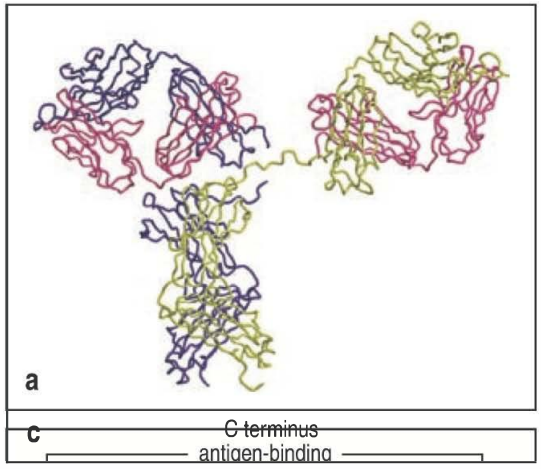
¿ CÓMO LOS RECONOCEN ?

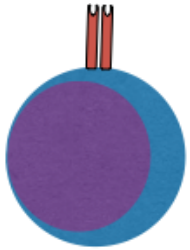
A TRAVÉS DE LOS RRP

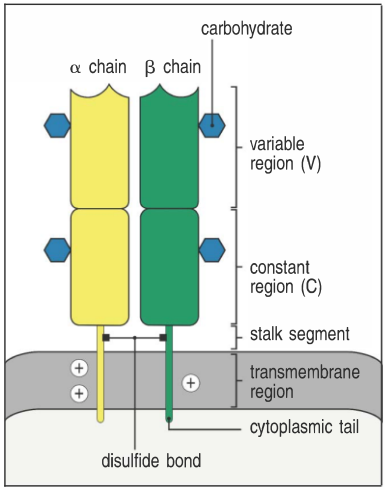


¿ QUÉ RECONOCEN LAS CÉLULAS DE LA INMUNIDAD ADAPTATIVA?

ANTÍGENOS







RECEPTOR B o **BCR**

RECEPTOR T o **TCR**

¿ CUÁNTOS RECEPTORES HAY ?

En la sangre de cualquiera de ustedes la diversidad de sus TCR's es de…

25.000.000 de receptores aproximadamente

1.000.000 cadenas beta diferentes

25 cadenas alfa diferentes

El número de genes es de 20.000 en el ser humano aproximadamente.

TENEMOS UN PROBLEMA

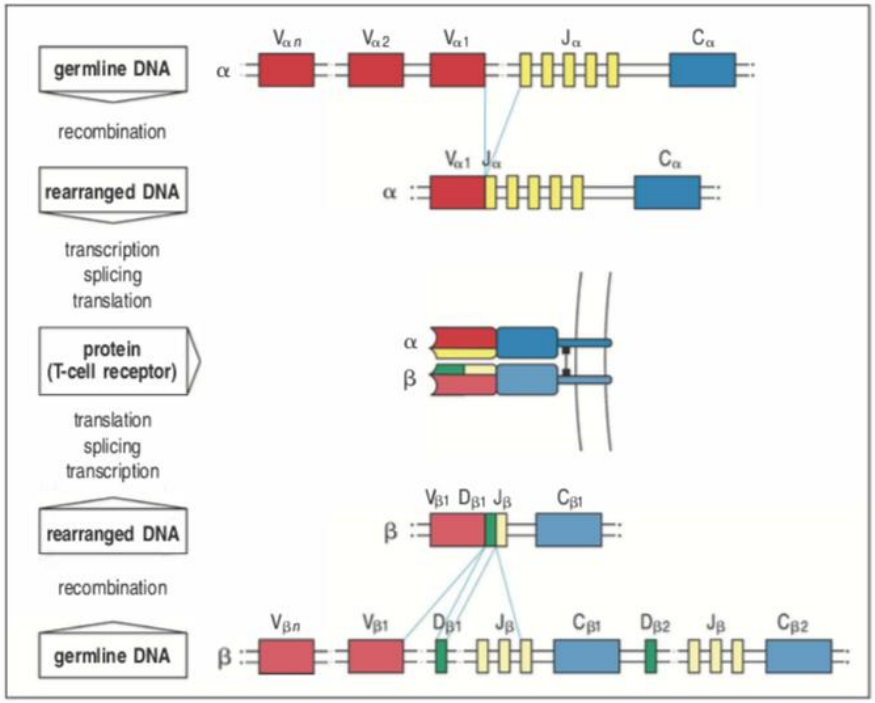
A Direct Estimate of the Human αβ T Cell Receptor Diversity

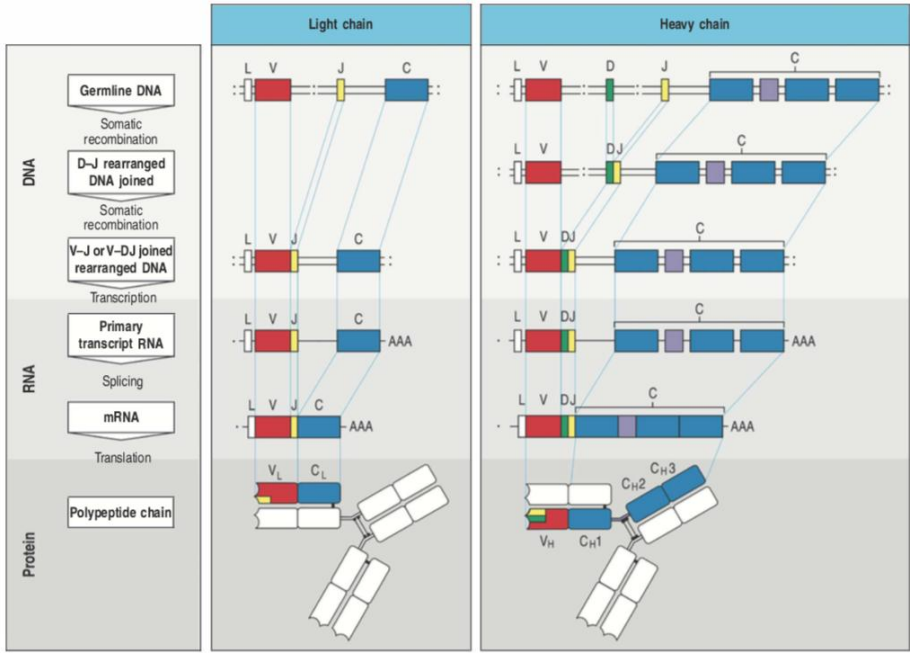
T. Petteri Arstila,*† Armanda Casrouge, Véronique Baron, Jos Even, Jean Kanellopoulos, Philippe Kourilsky

Science AAAS

¿ CÓMO SE GENERAN LOS RECEPTORES ?

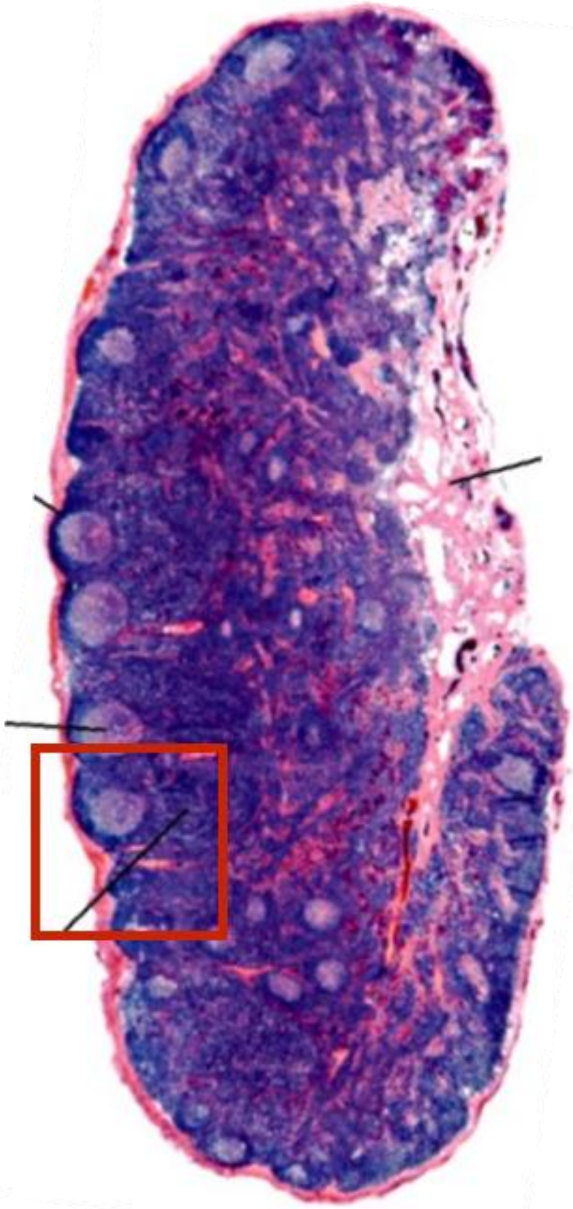
RECOMBINACIÓN SOMÁTICA





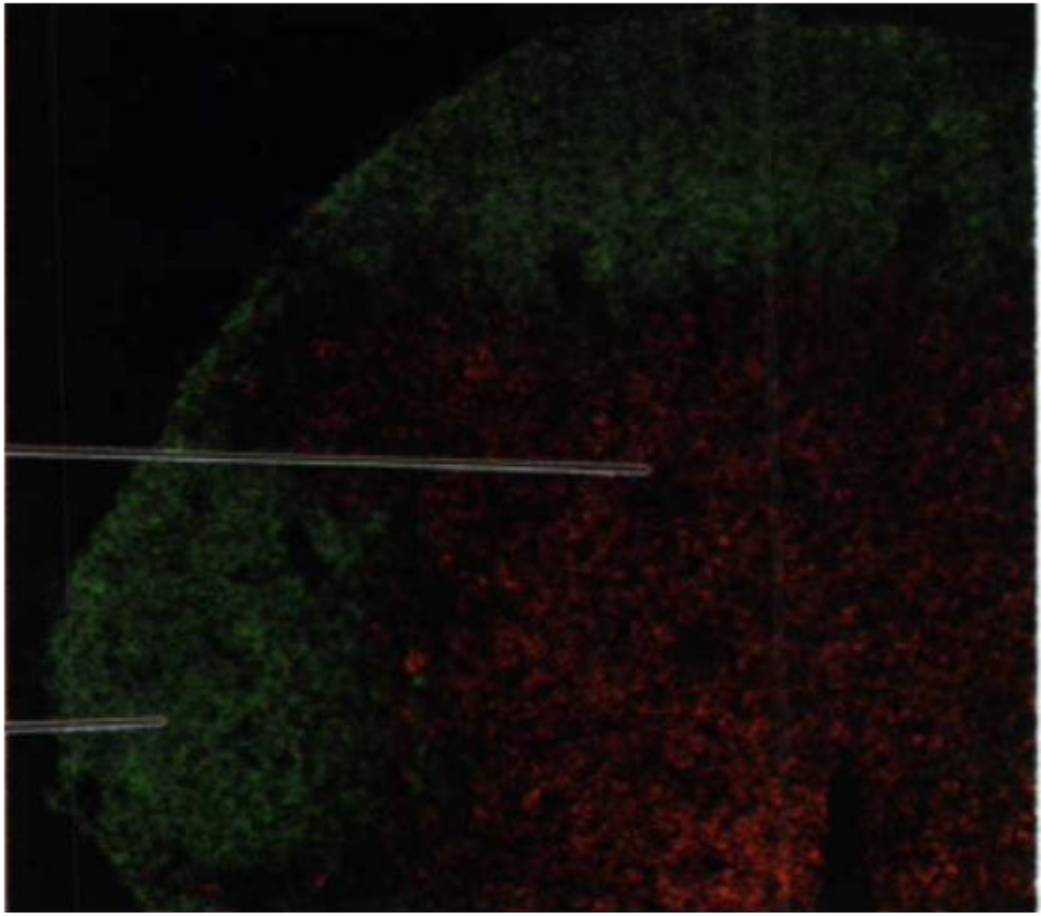
¿DÓNDE GENERAN SUS RECEPTORES LOS LINFOCITOS T Y B Y CÓMO SE LLAMA ESE PROCESO?

DISPOSICIÓN DE LOS LINFOCITOS T Y B EN LOS OLS

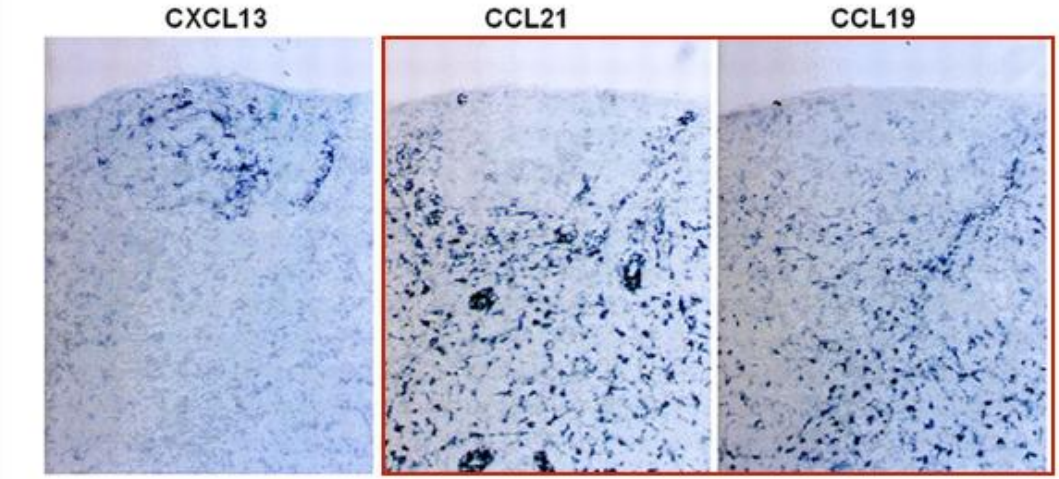


ZONA T

ZONA B

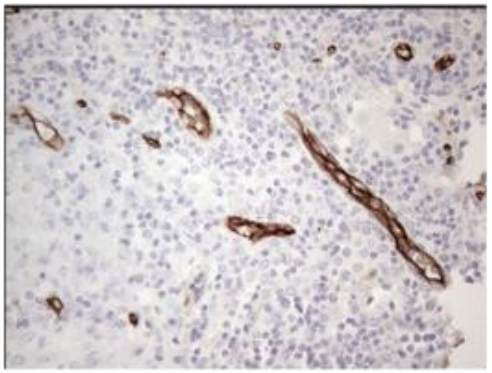


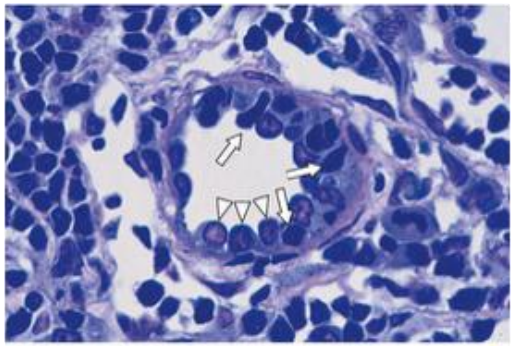
RECIRCULACIÓN POR OLS GRACIAS A:

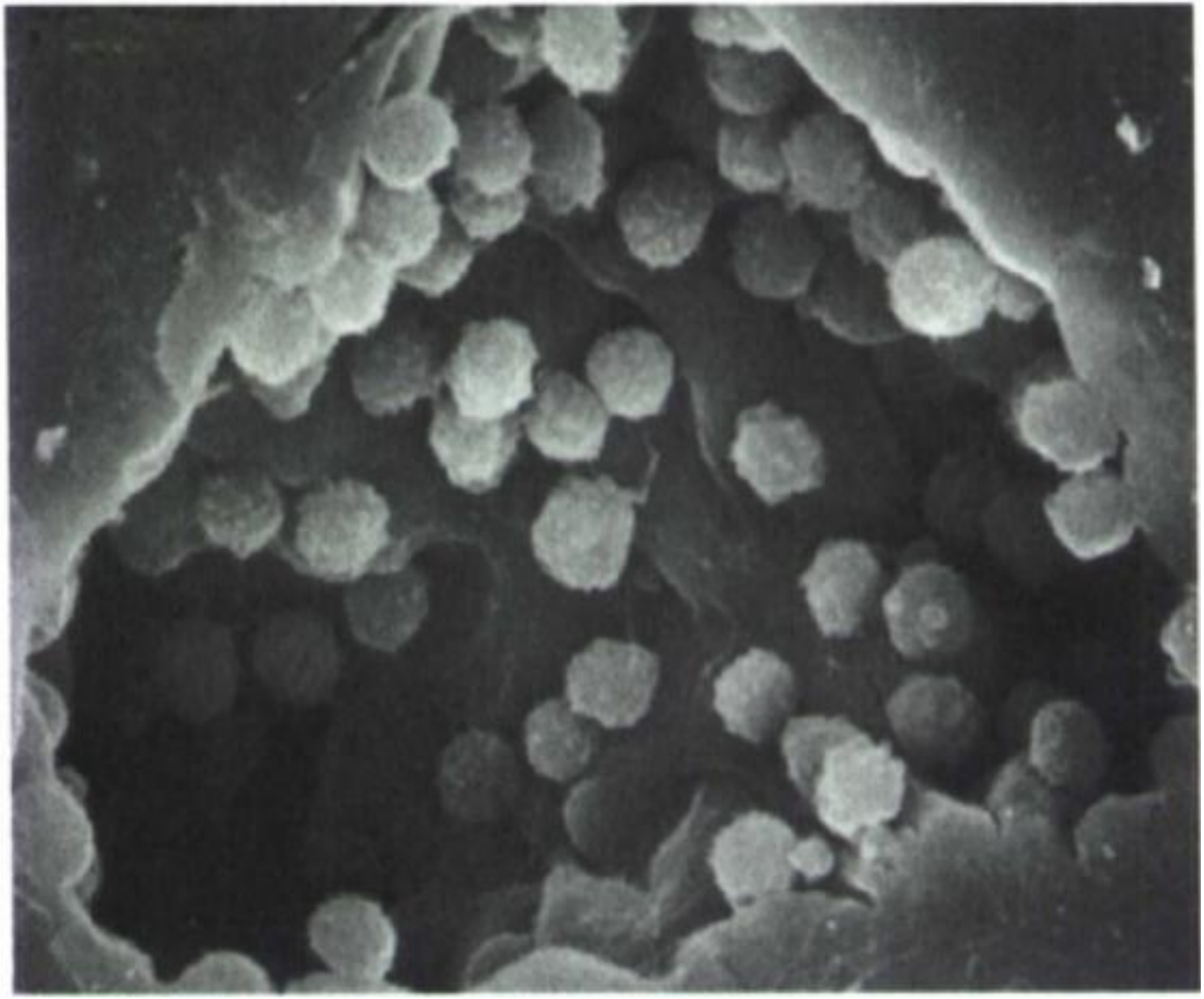


CCR7

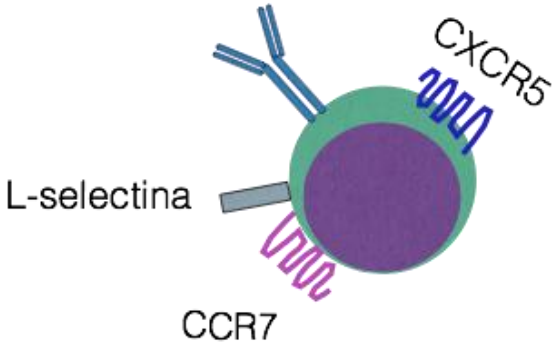
L selectina





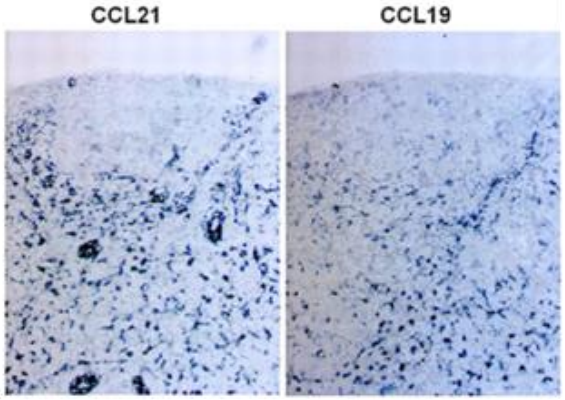


LINFOCITO B



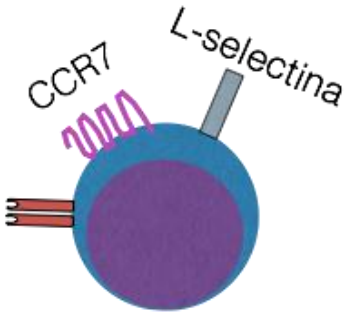
CCL19
CCL21

CCR7



GRADIENTE DE QUIMIOCINAS

LINFOCITO T



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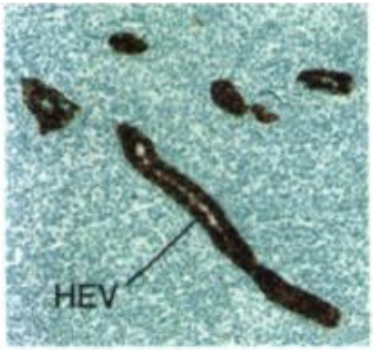
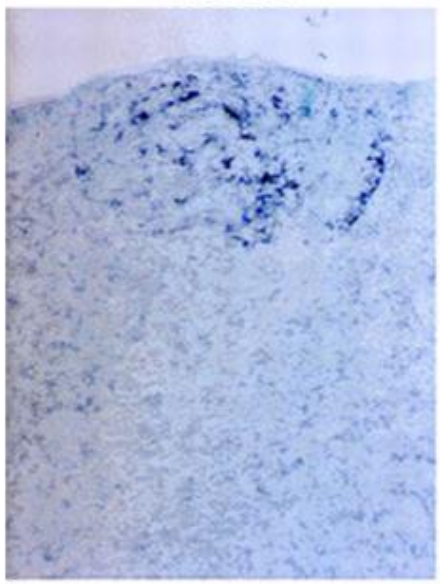
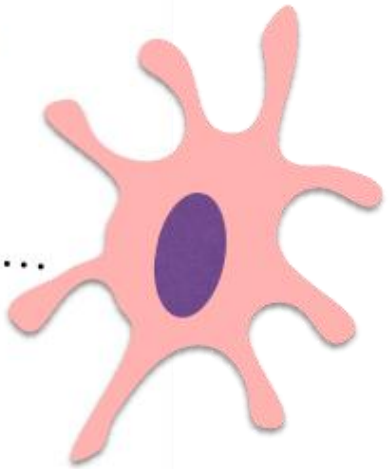


SIALOMUCINA FUCOSILADA

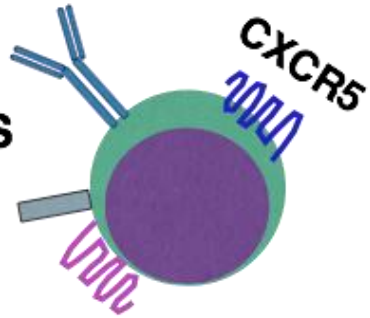


CÉLULA DENDRÍTICA FOLICULAR

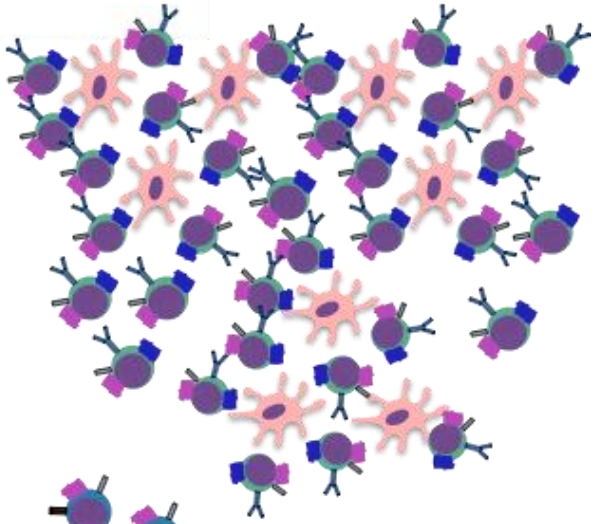


CXCL13

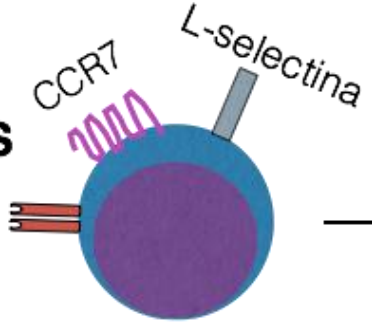
LINFOCITOS B



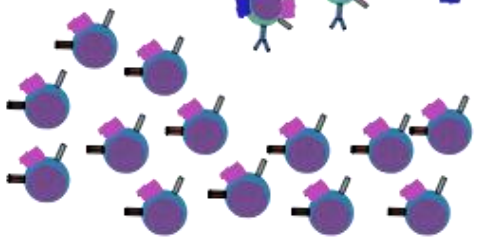
FOLÍCULOS LINFOIDES



LINFOCITOS T

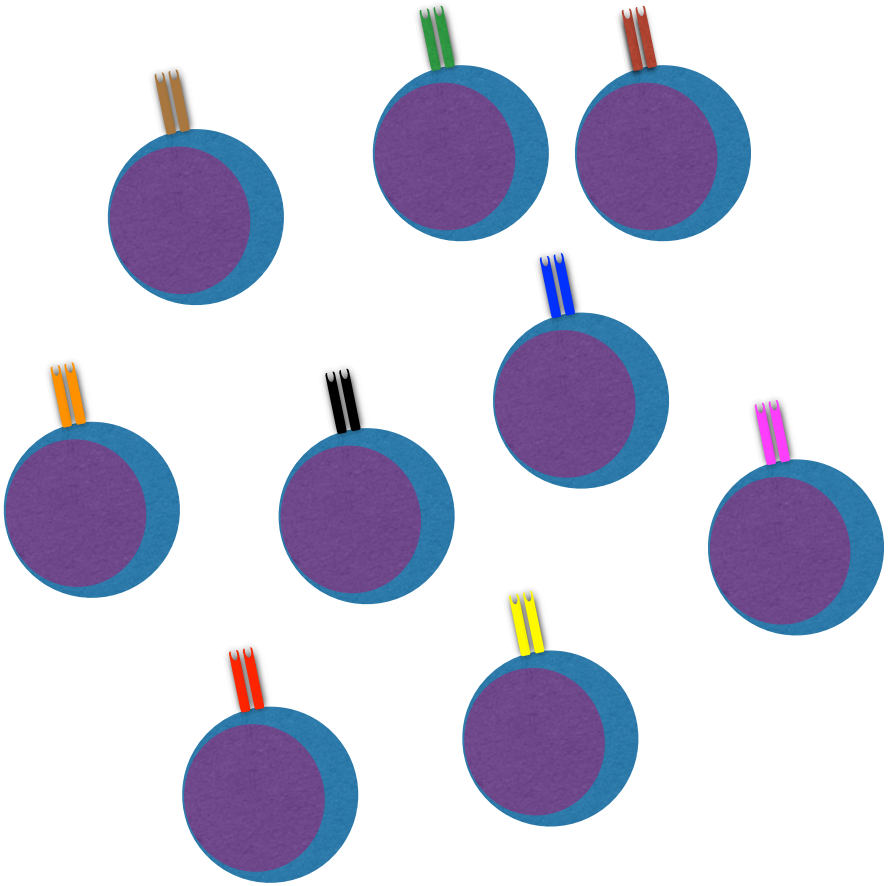


PARACORTEZA

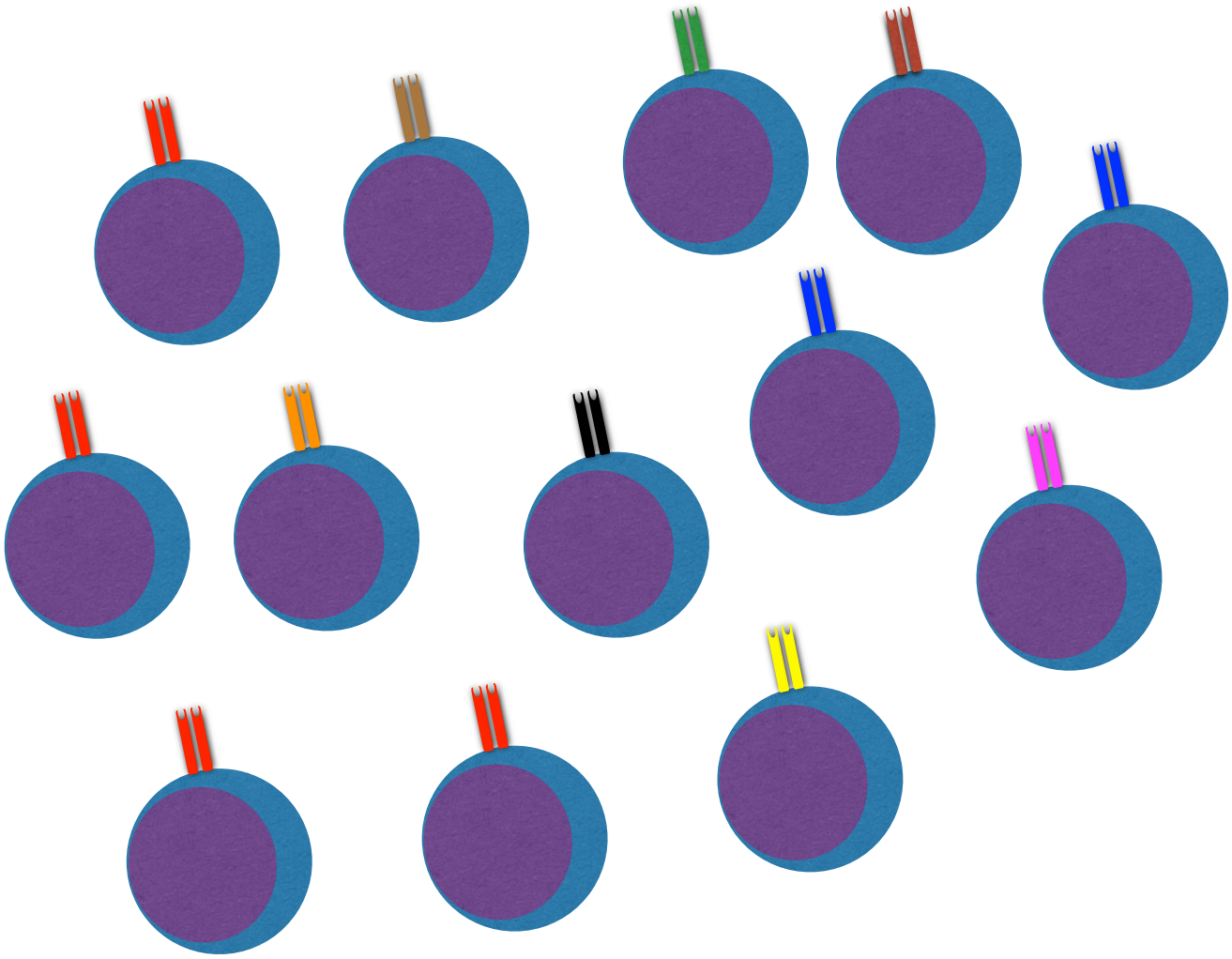


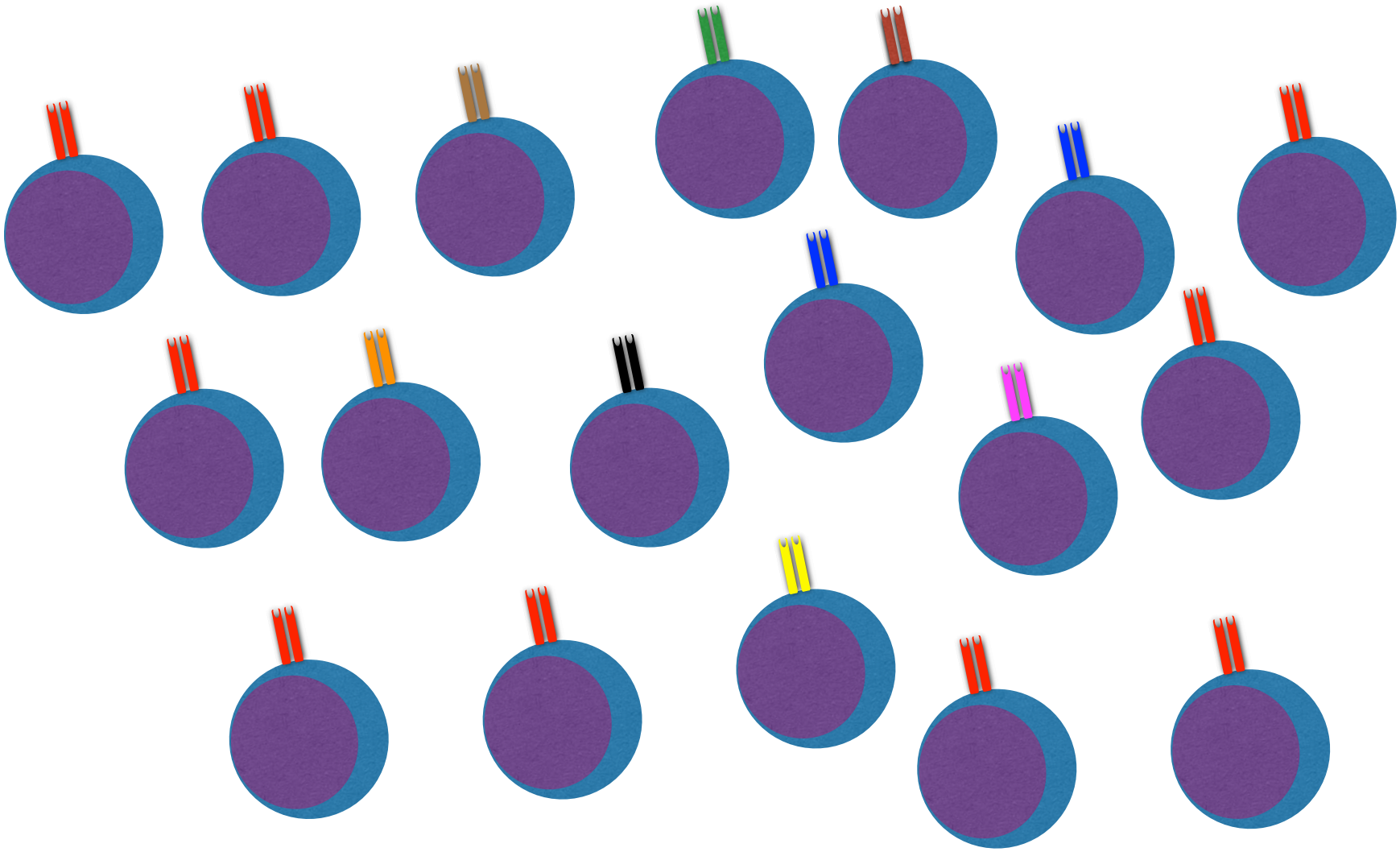
¿ QUÉ TIENE DE ESPECIAL LA INMUNIDAD ADAPTATIVA?

PRIMER ENCUENTRO CON UN ANTÍGENO



SEGUNDO ENCUENTRO CON UN ANTÍGENO





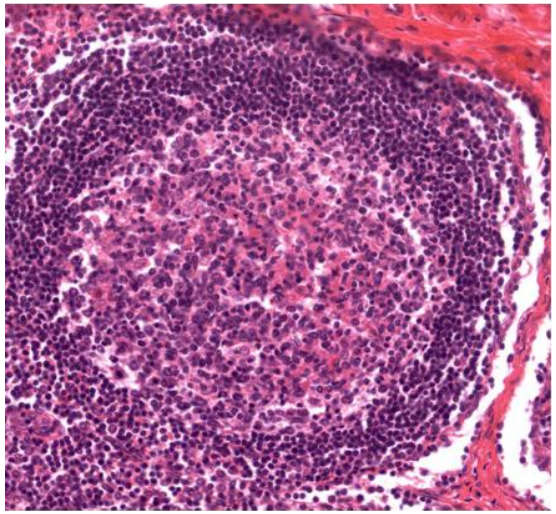
A MEDIDA QUE PASA EL TIEMPO, LA CANTIDAD DE LINFOCITOS QUE RESPONDEN A UN ANTÍGENO ESPECÍFICO , AUMENTA

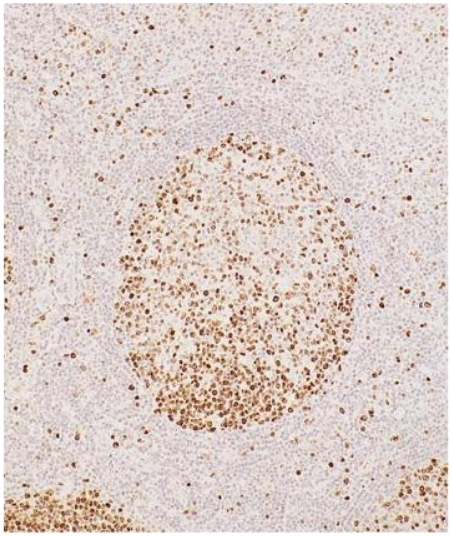
LA PROBABILIDAD DE QUE SE DE EL ENCUENTRO CON EL ANTÍGENO ES CADA VEZ MAYOR Y MÁS RÁPIDA.

EXPANSIÓN CLONAL

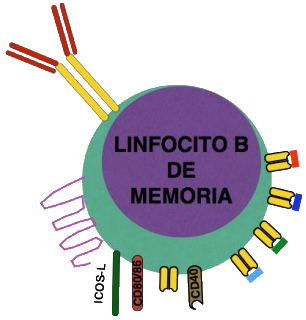
MEMORIA

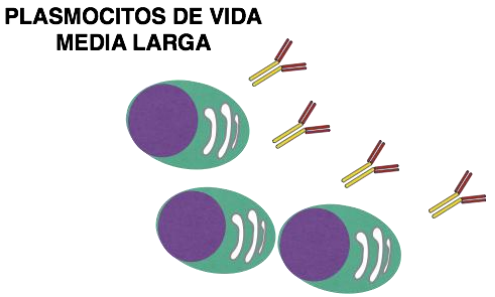
LOS LINFOCITOS B RECONOCEN EL ANTÍGENO DE FORMA SOLUBLE





SECONDARY FOLLICLE
Proliferating cells labeled with the paraffin-reactive antibody MIB-1 (against the Ki-67 antigen) are concentrated in the dark zone of the germinal center at bottom, away from the site of antigen entry from the tonsillar surface at top.





NO OCURRE LO MISMO PARA LOS LINFOCITOS T

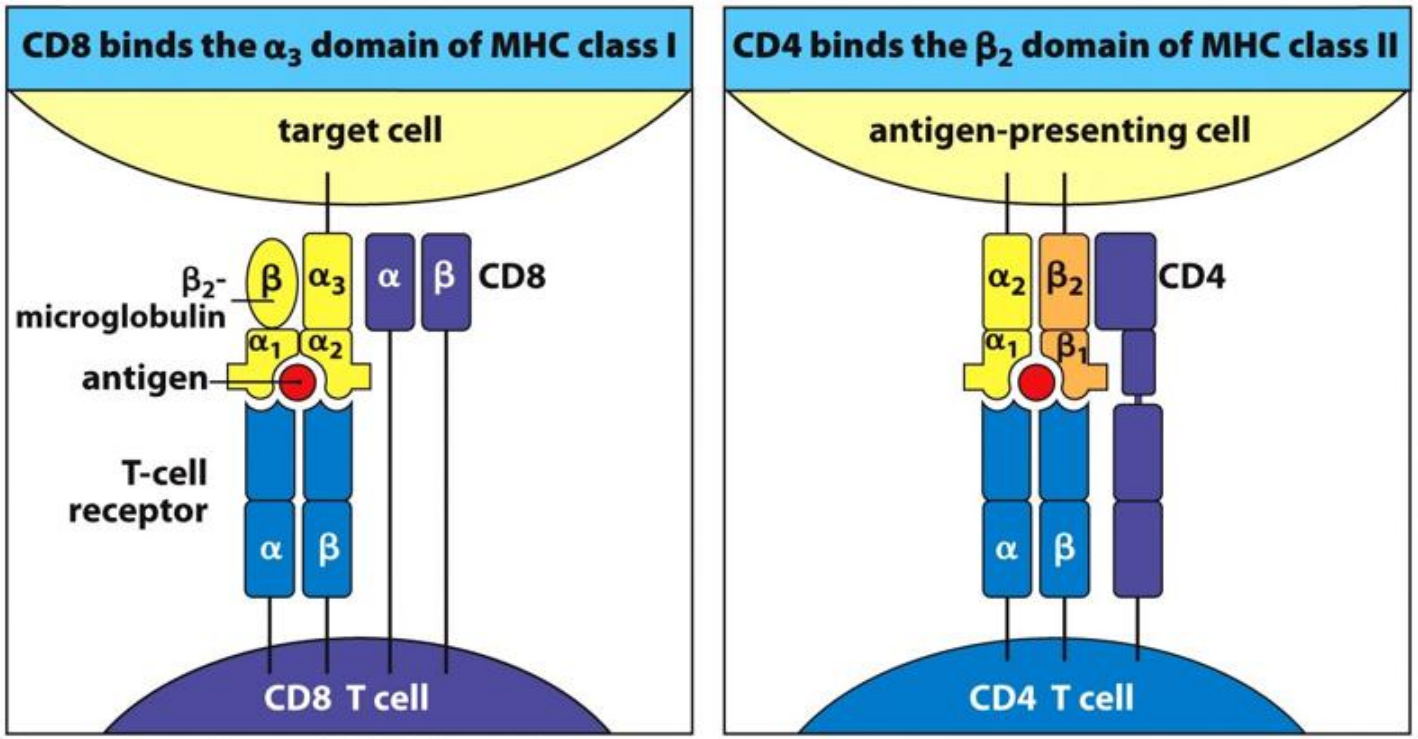
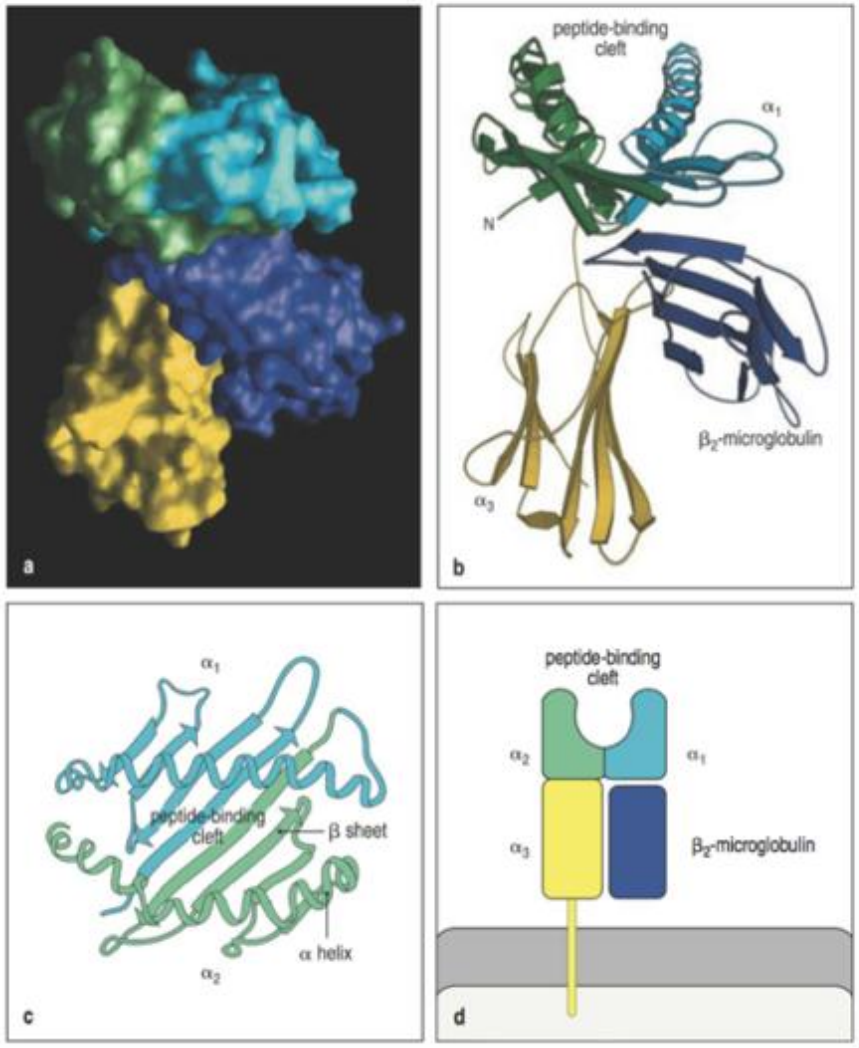
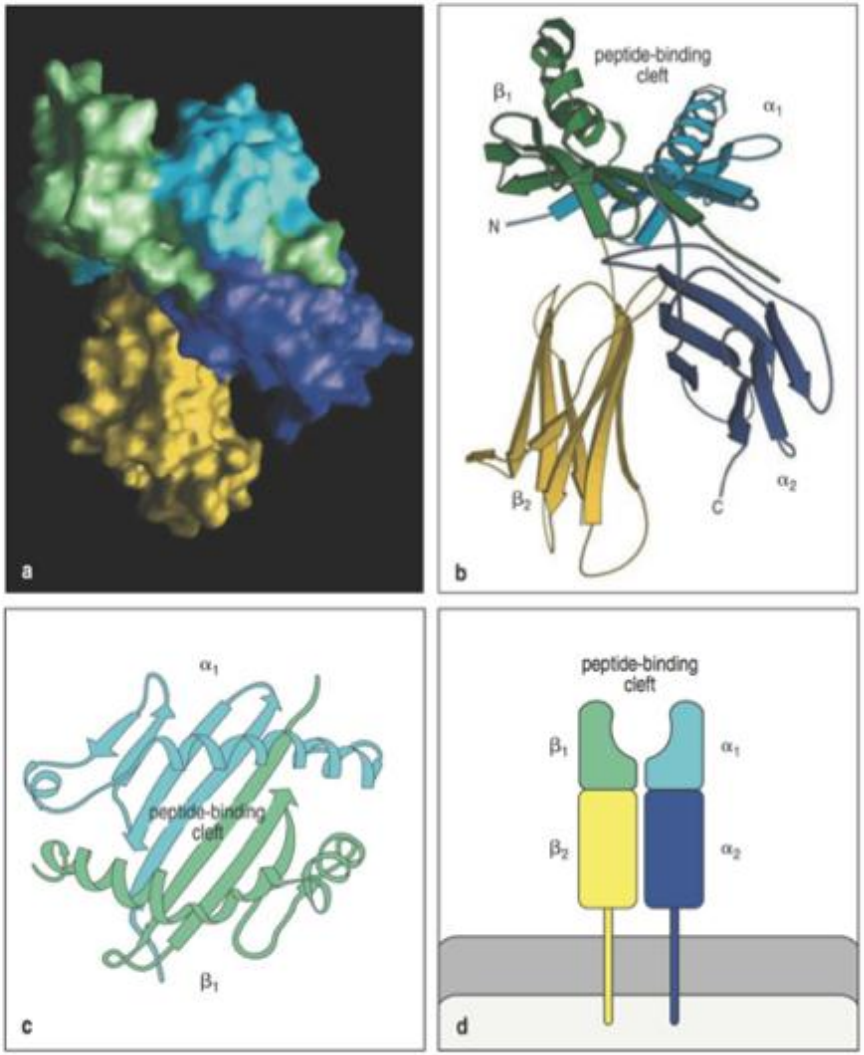


Figure 5.14 The Immune System, 3ed. (© Garland Science 2009)

MOLÉCULAS DEL CMH



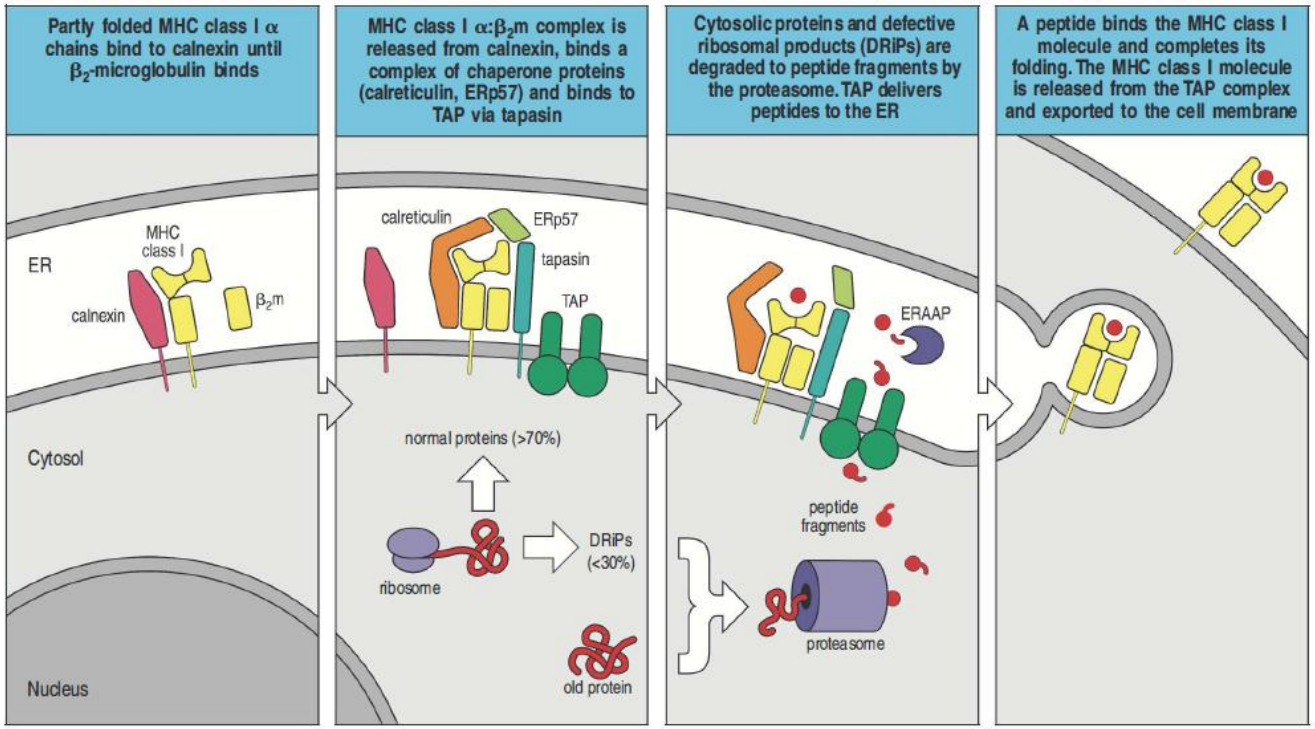
CMH I

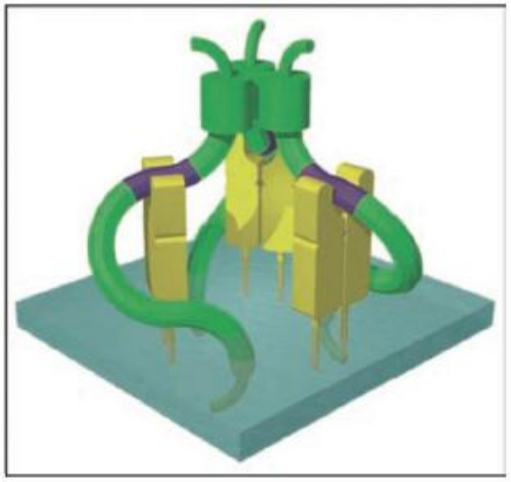


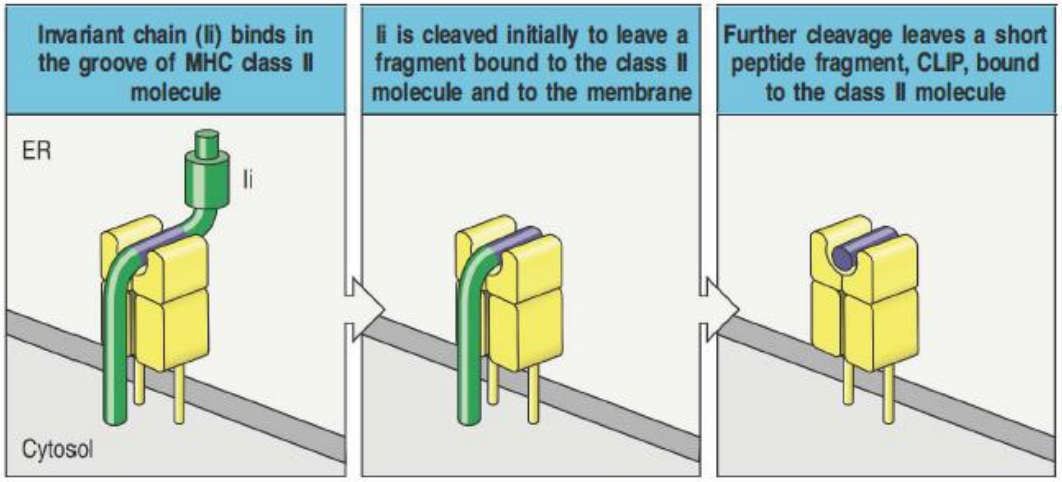
CMH II

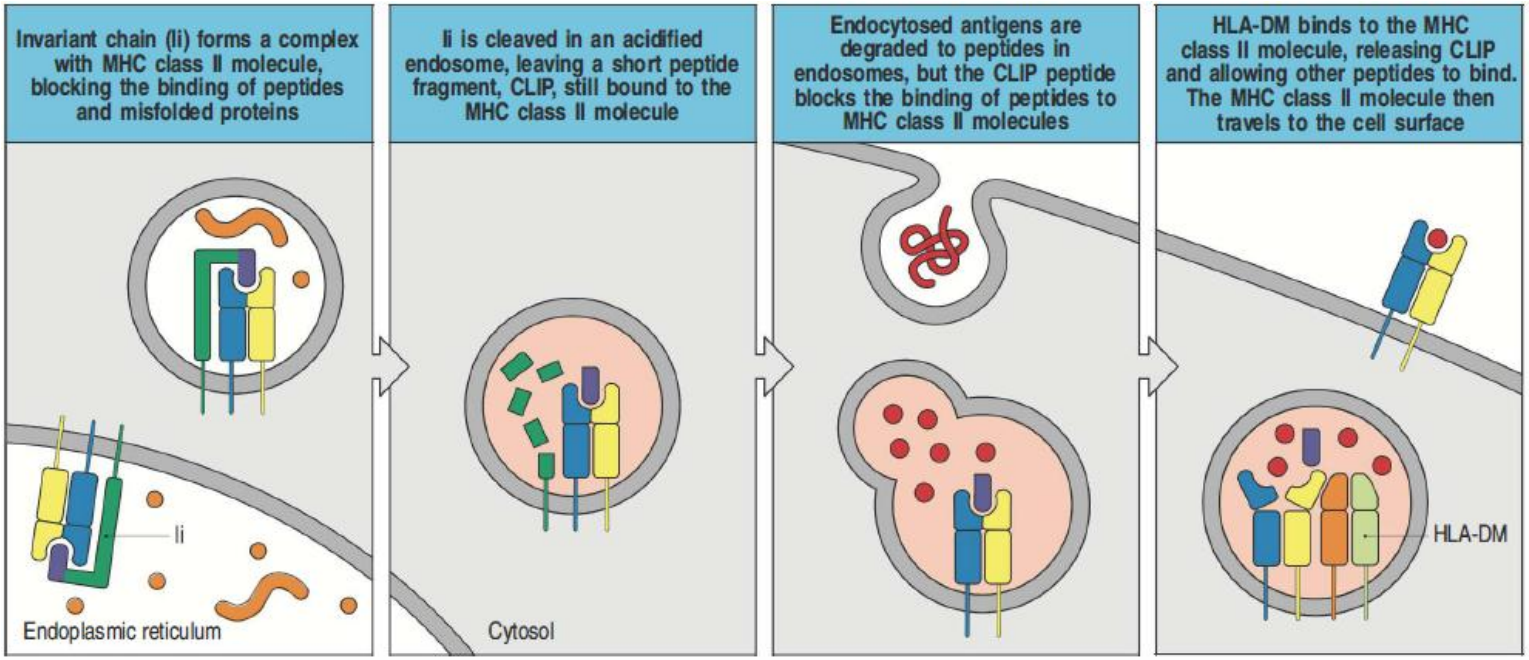
MUCHOS PATÓGENOS REPLICAN DENTRO DE LAS CÉLULAS

PRESENTACIÓN POR CMH I





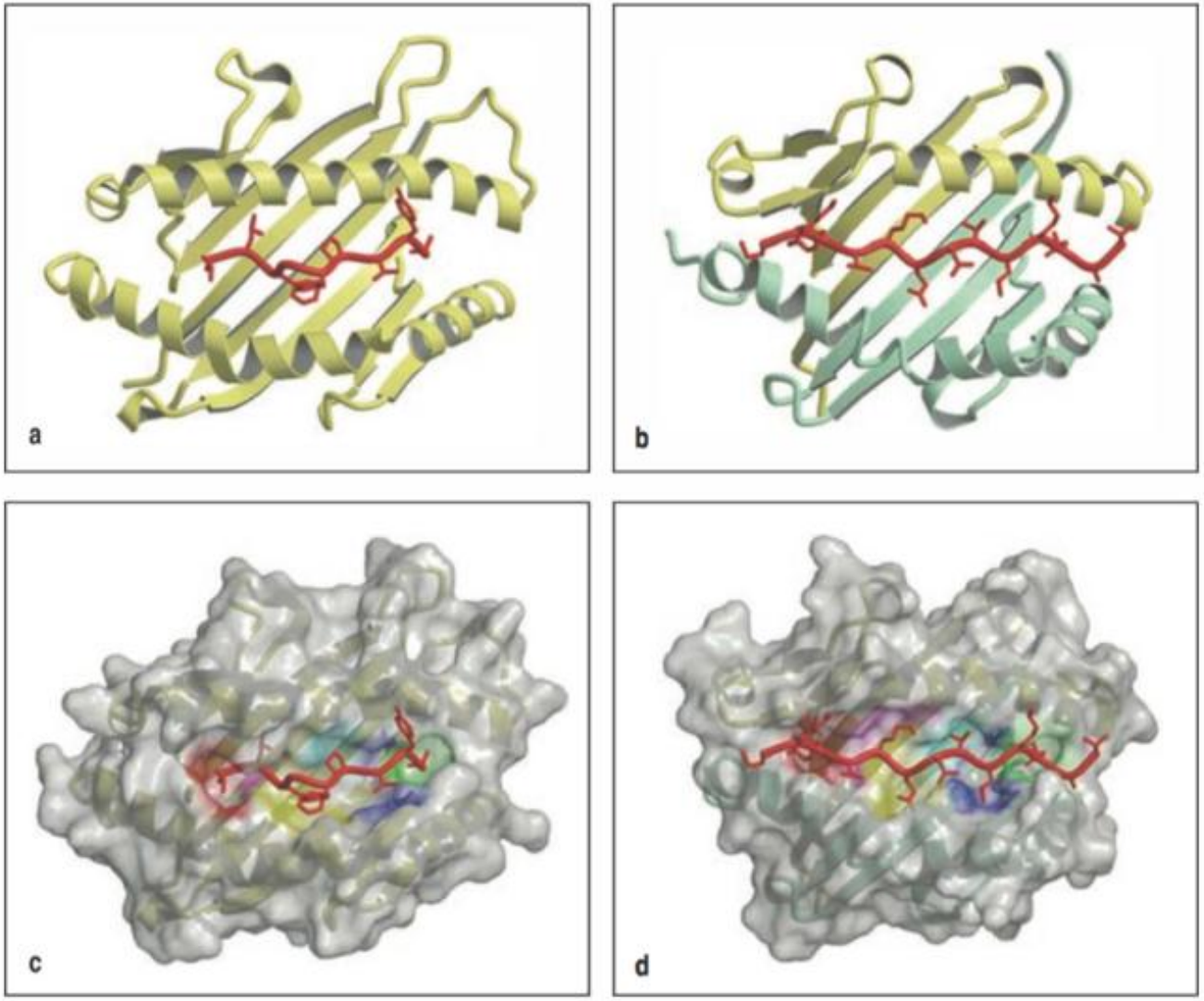

Invariant chain (Ii) binds in the groove of MHC class II molecule
Ii is cleaved initially to leave a fragment bound to the class II molecule and to the membrane
Further cleavage leaves a short peptide fragment, CLIP, bound to the class II molecule
ER
Ii
Cytosol


Invariant chain (Ii) forms a complex with MHC class II molecule, blocking the binding of peptides and misfolded proteins
Ii is cleaved in an acidified endosome, leaving a short peptide fragment, CLIP, still bound to the MHC class II molecule
Endocytosed antigens are degraded to peptides in endosomes, but the CLIP peptide blocks the binding of peptides to MHC class II molecules
HLA-DM binds to the MHC class II molecule, releasing CLIP and allowing other peptides to bind. The MHC class II molecule then travels to the cell surface
Ii
Endoplasmic reticulum
Cytosol
HLA-DM

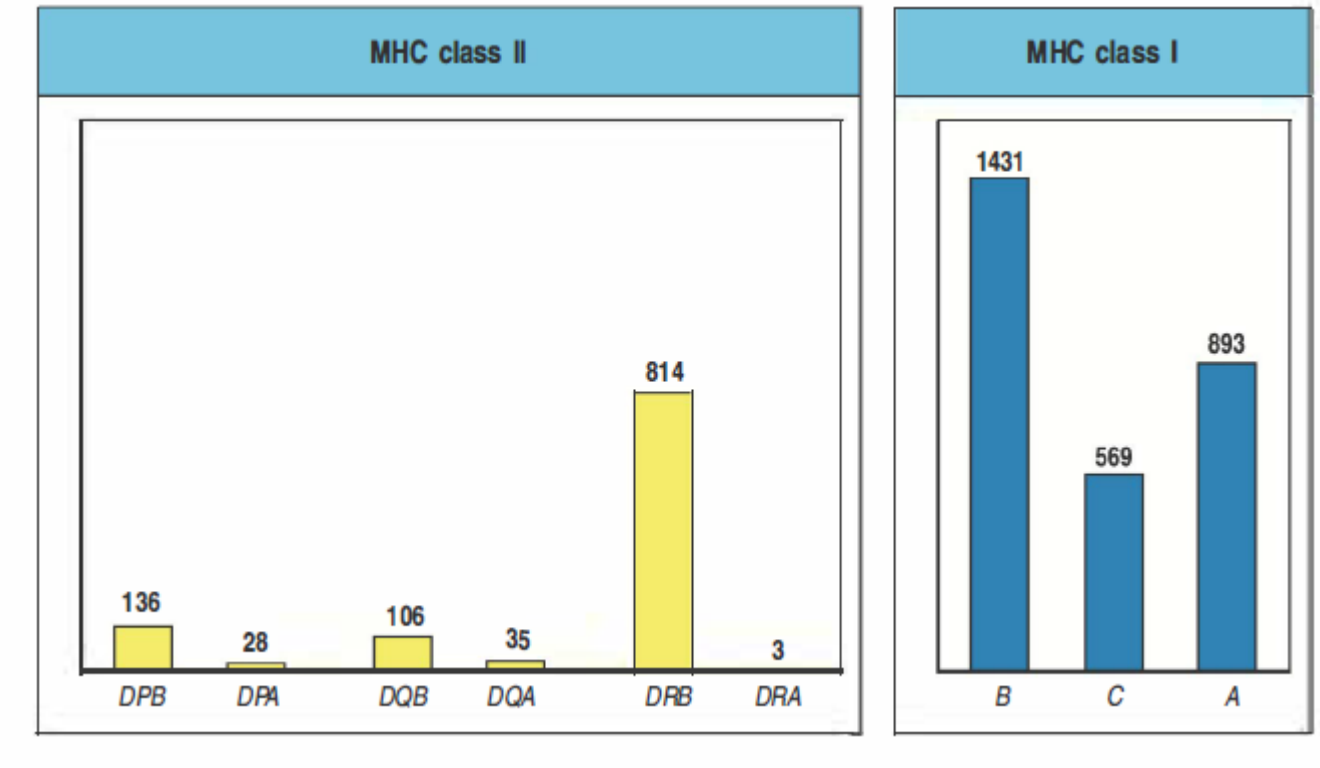
PRESENTAN PÉPTIDOS

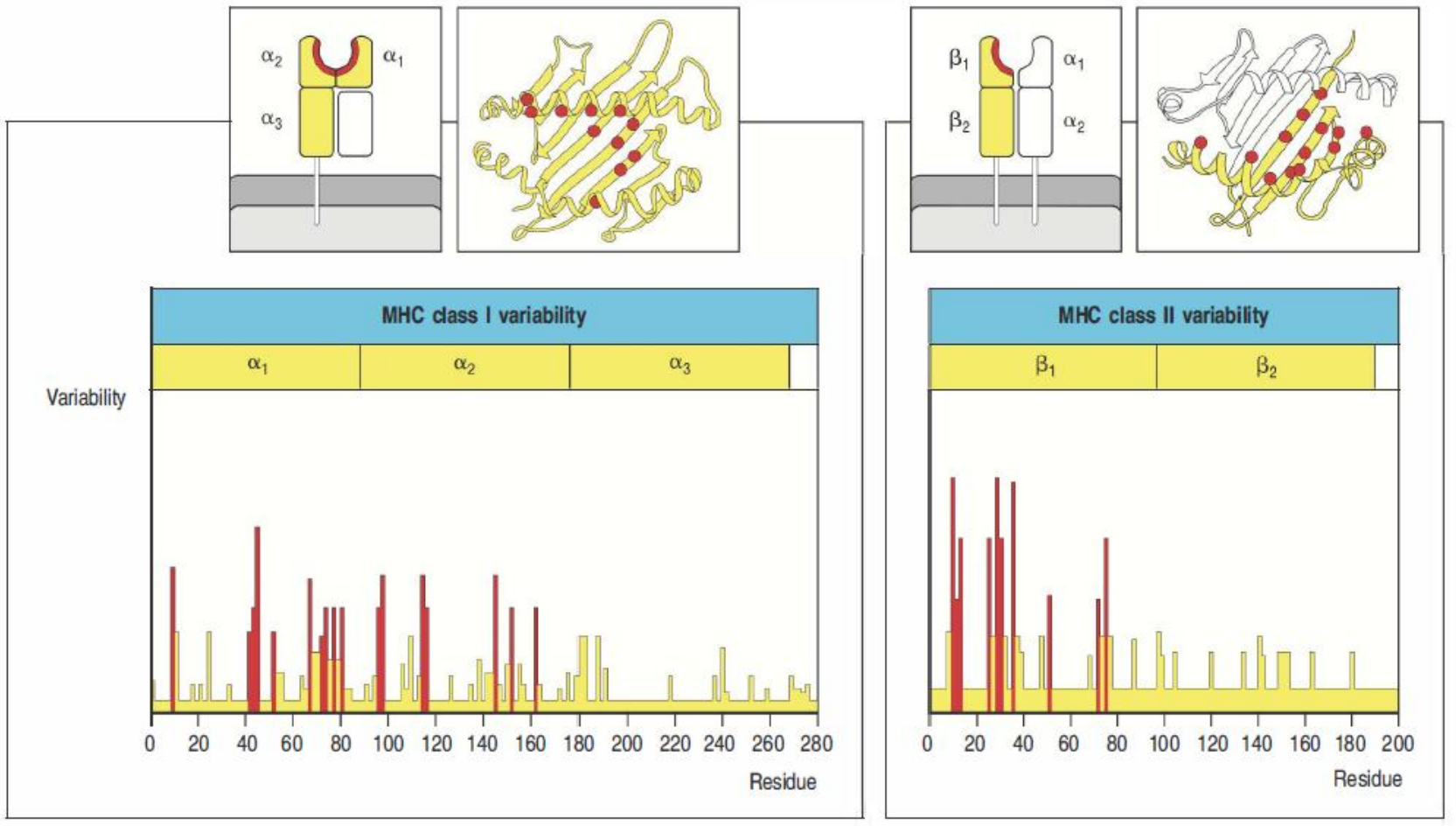
CMH I

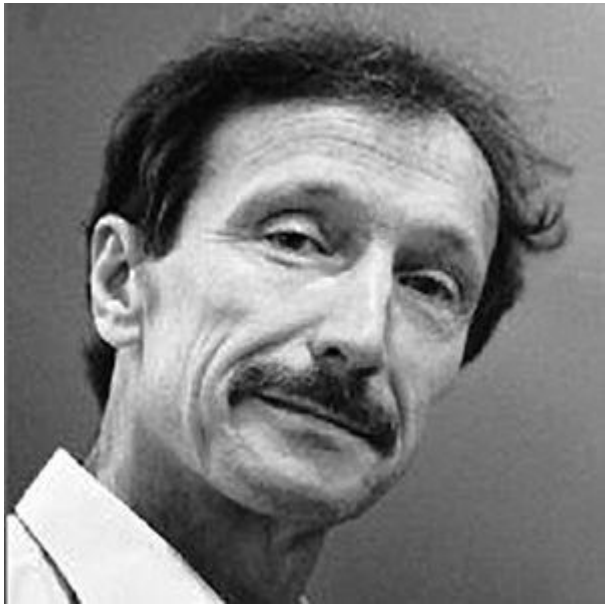
CMH II



POLIMORFISMOS




α2
α1
α3
β1
α1
β2
α2
MHC class I variability
α1
α2
α3
Variability
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280
Residue
MHC class II variability
β1
β2
0 20 40 60 80 100 120 140 160 180 200
Residue

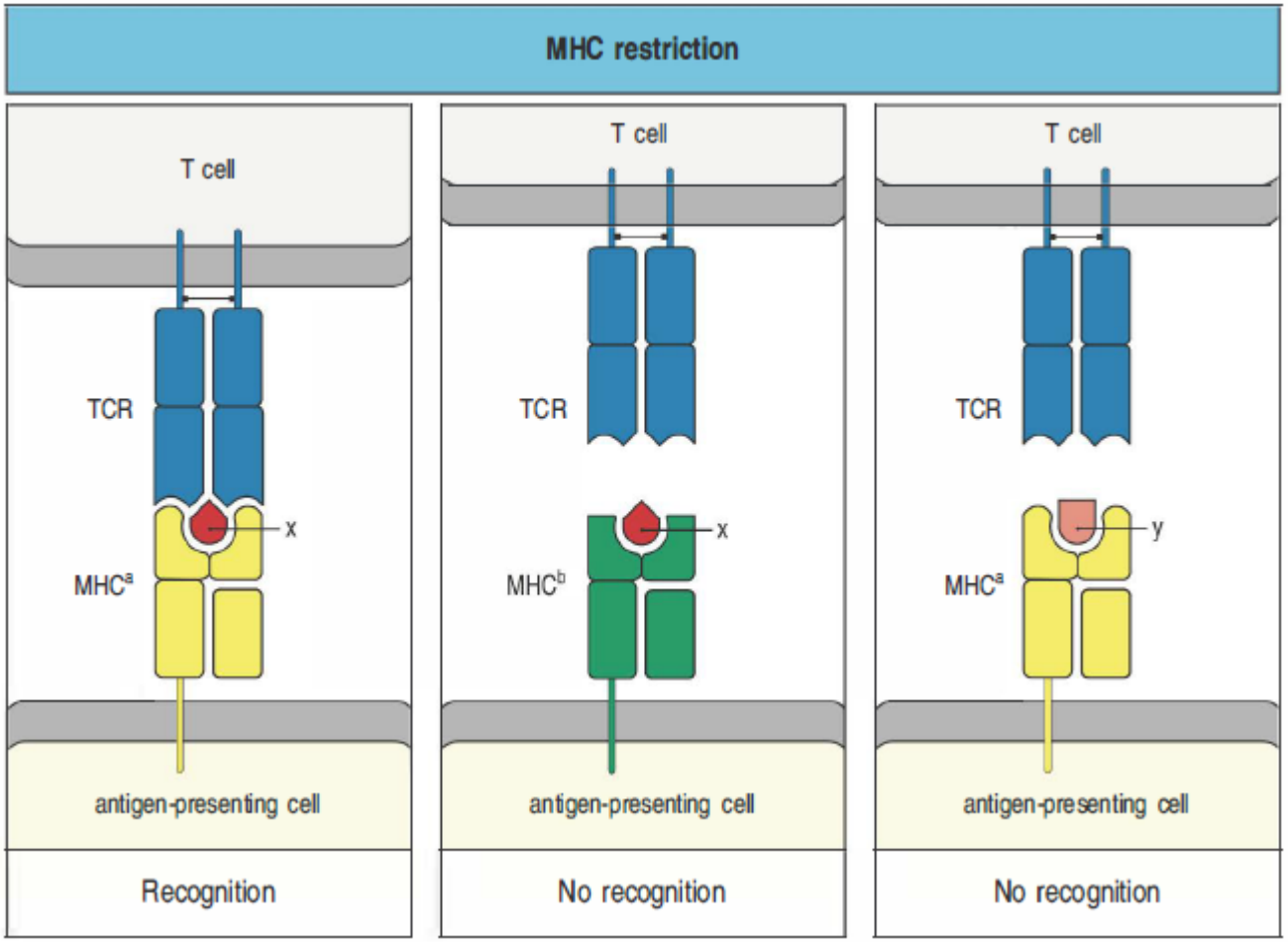


Zinkernagel, Rolf Martin

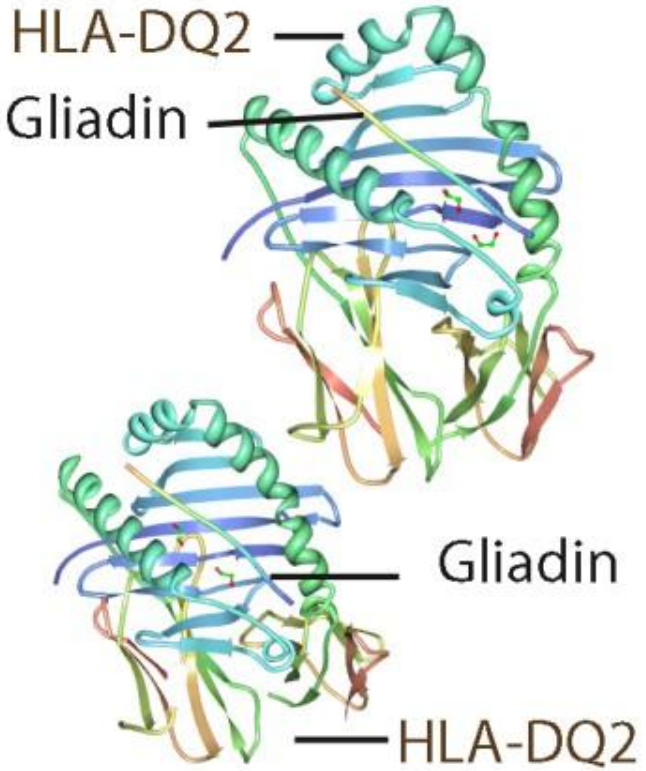
Peter Doherty

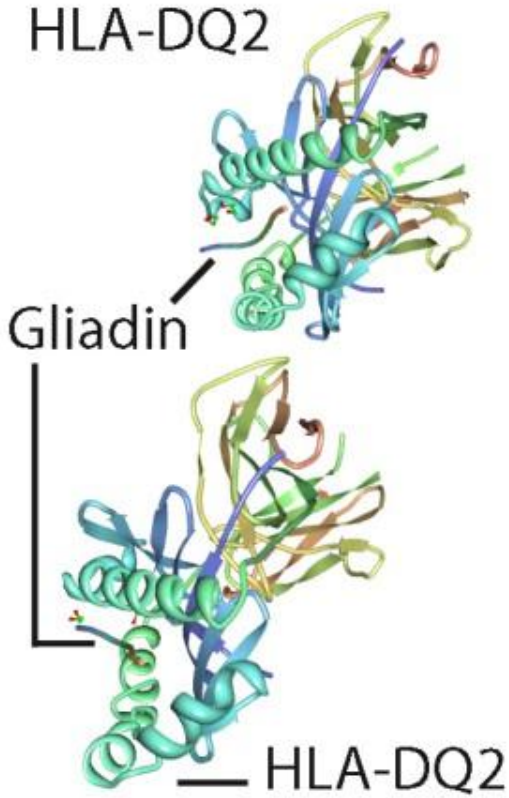
EXPERIMENTO

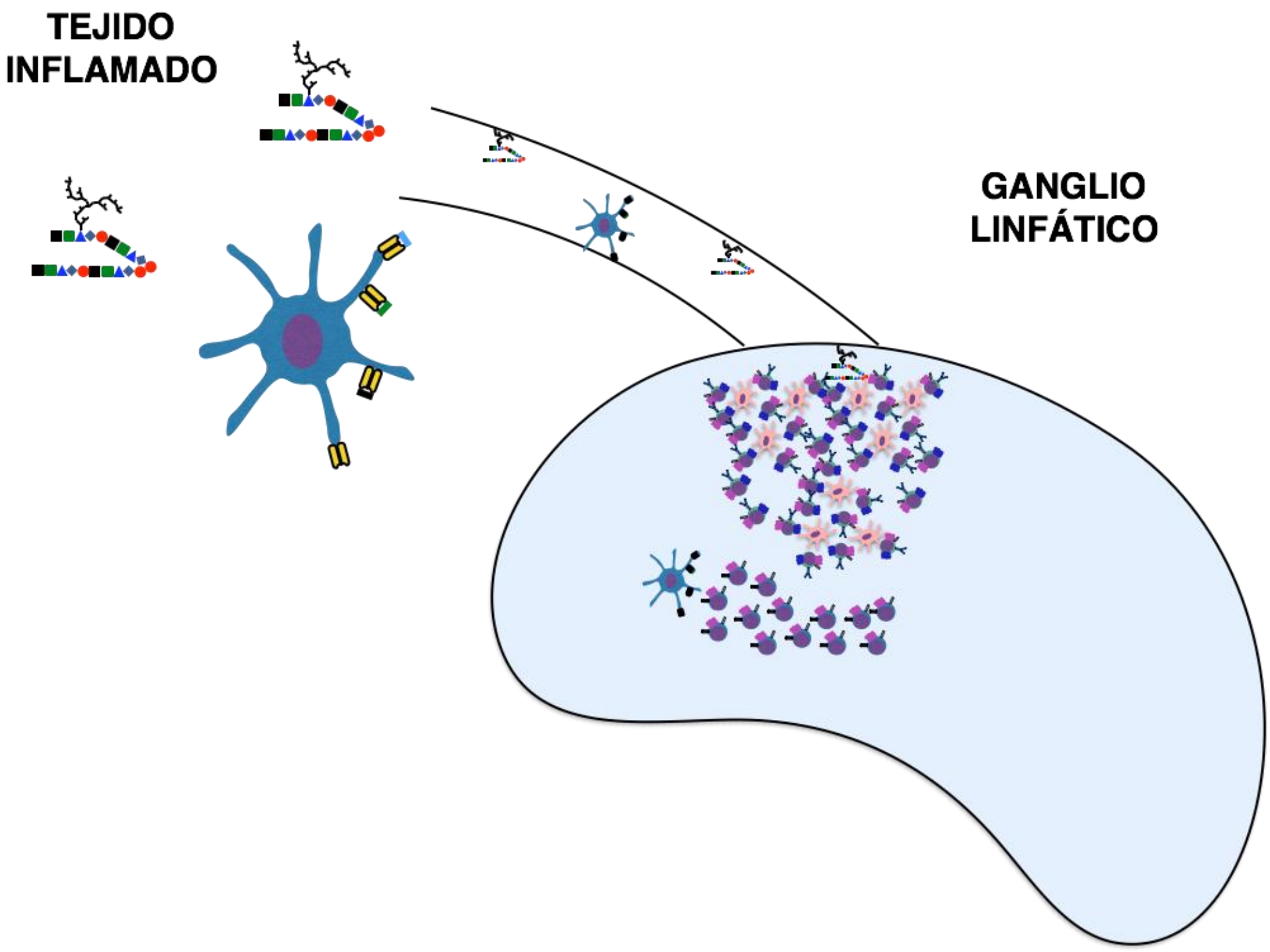
RESTRICCIÓN POR CMH

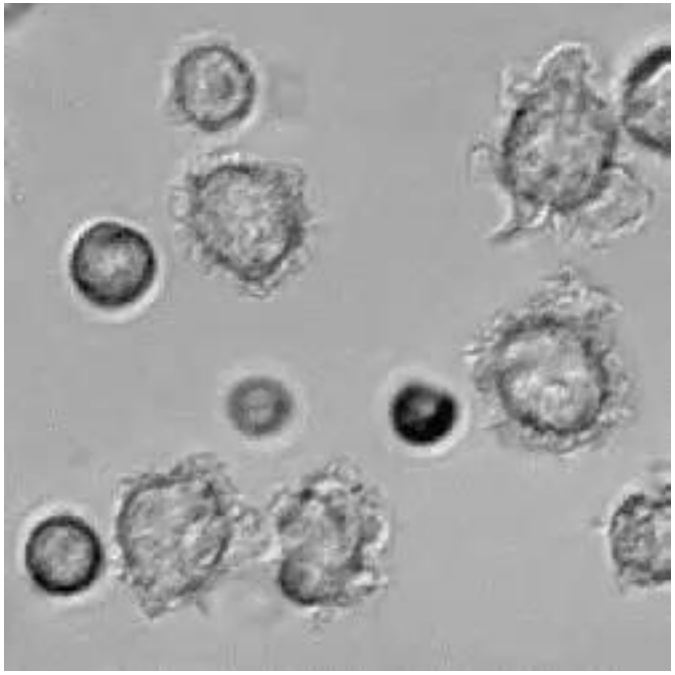


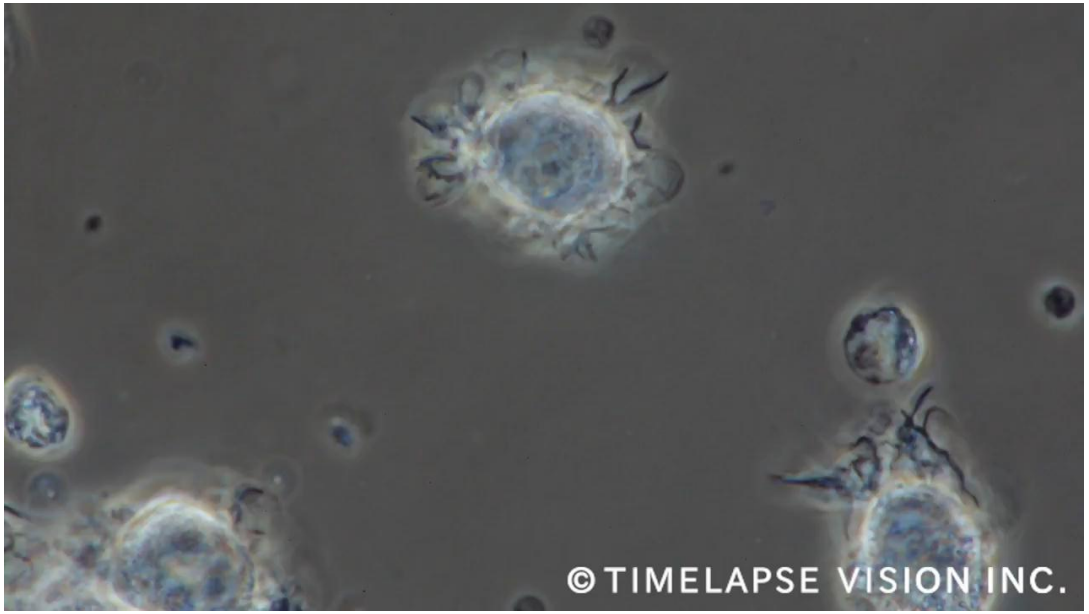
POLIMORFISMO Y ENFERMEDAD CELÍACA






TEJIDO
INFLAMADO
GANGLIO
LINFÁTICO

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