
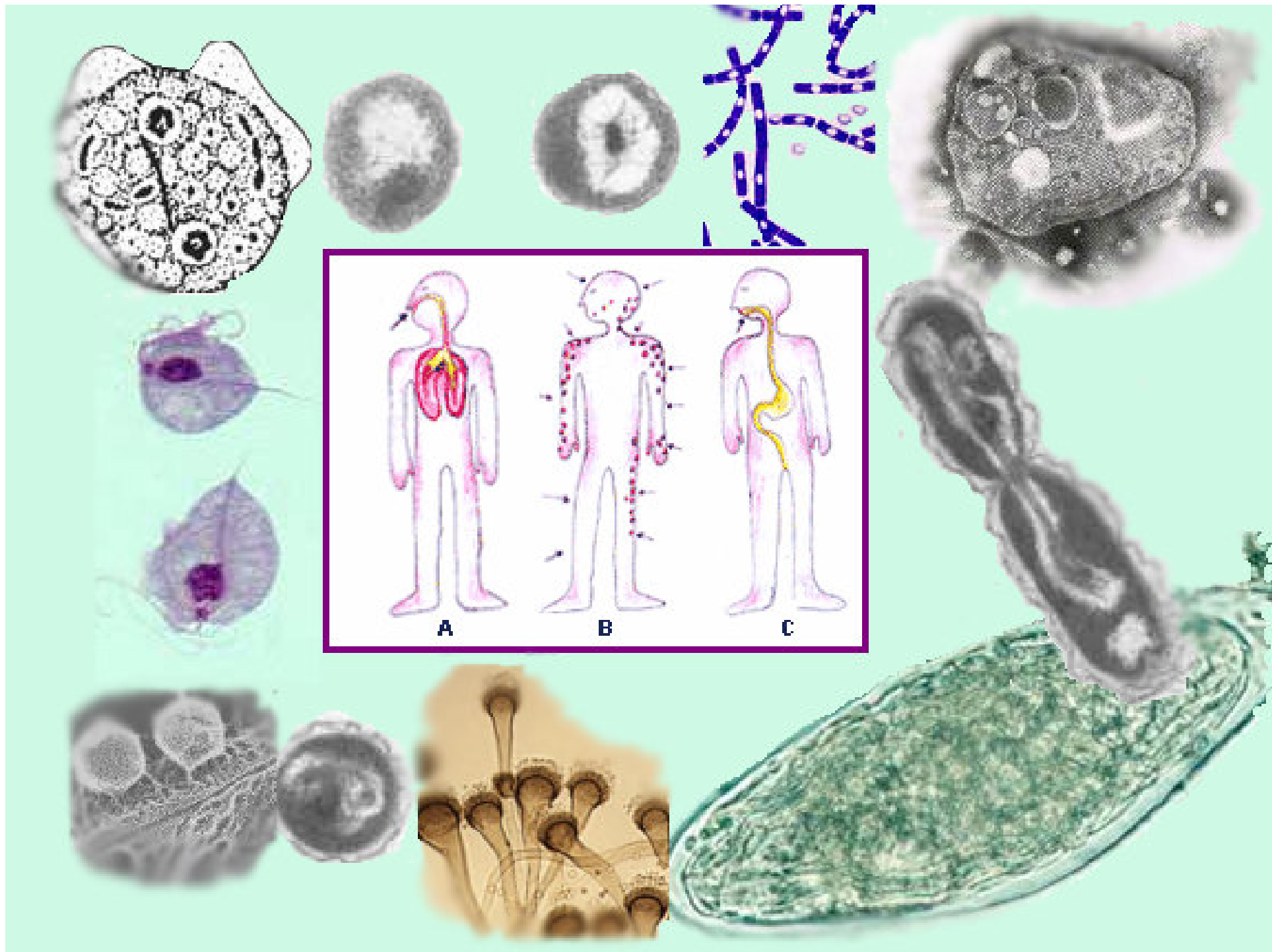


# Presentación de Antígenos Endógenos y Exógenos

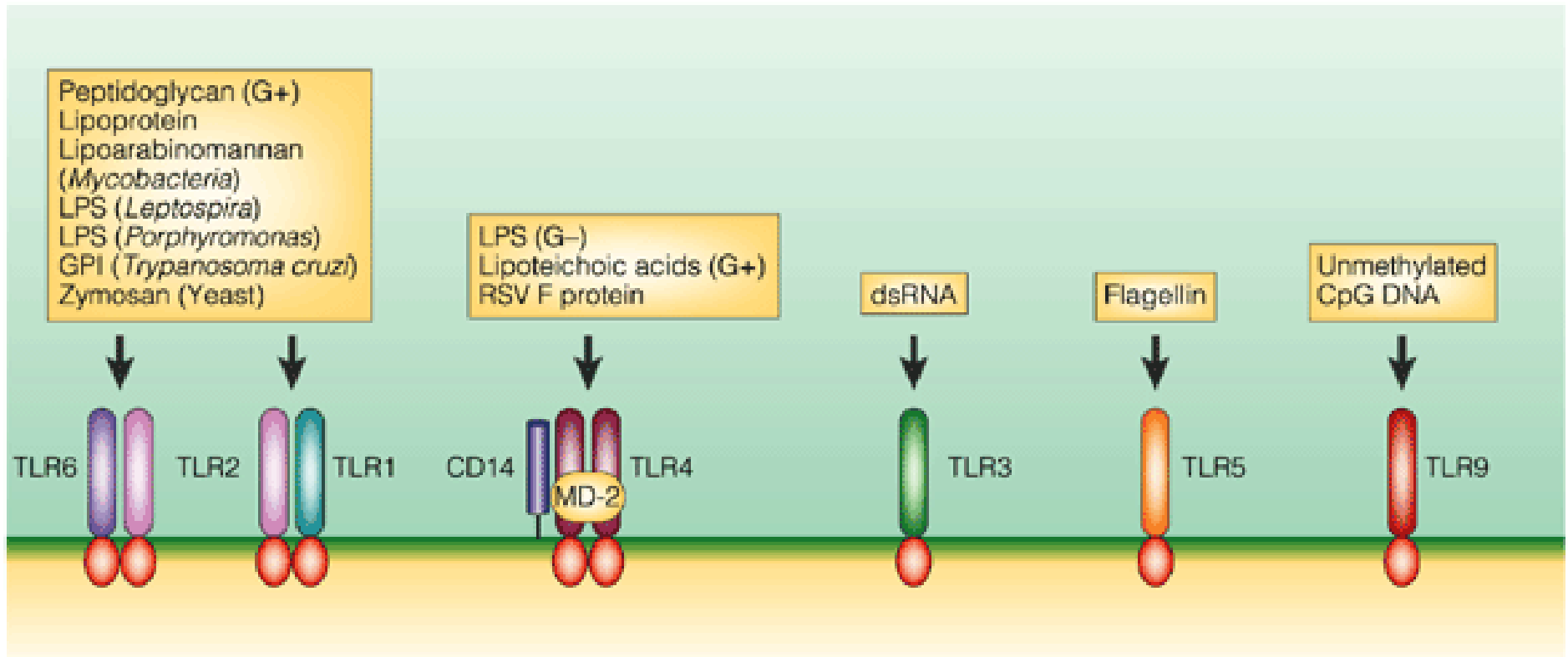
An electron micrograph showing a large, electron-dense, roughly spherical structure in the center, which appears to be an antigen-presenting cell or a large vesicle. The surface of this structure is covered with numerous small, dark, irregularly shaped particles, likely representing antigen fragments or receptors. The background is dark and filled with many smaller, similar-looking particles, suggesting a high concentration of these components. The overall image has a grainy, high-magnification appearance typical of electron microscopy.

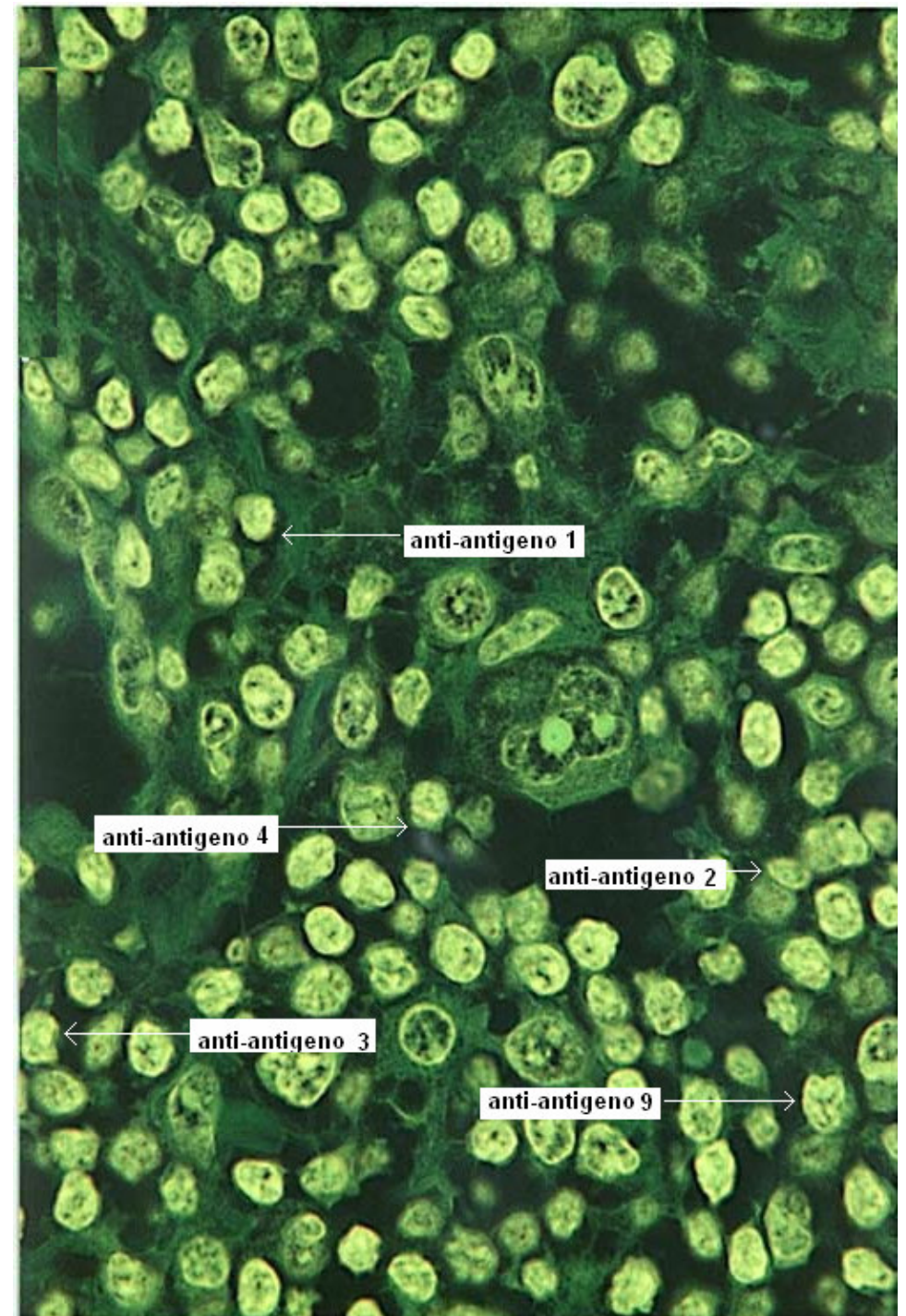
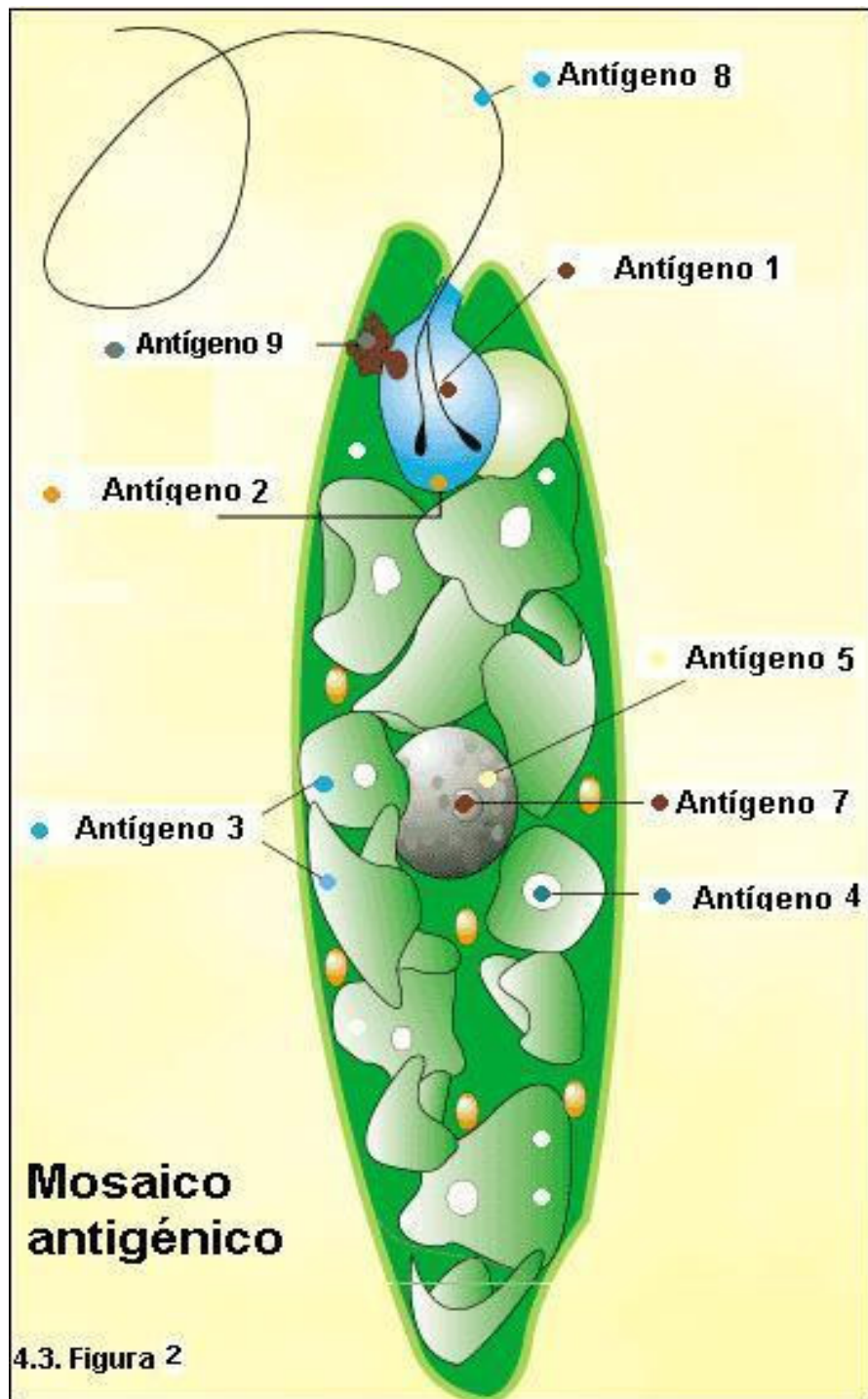
I. Pepper

2  $\mu$ m

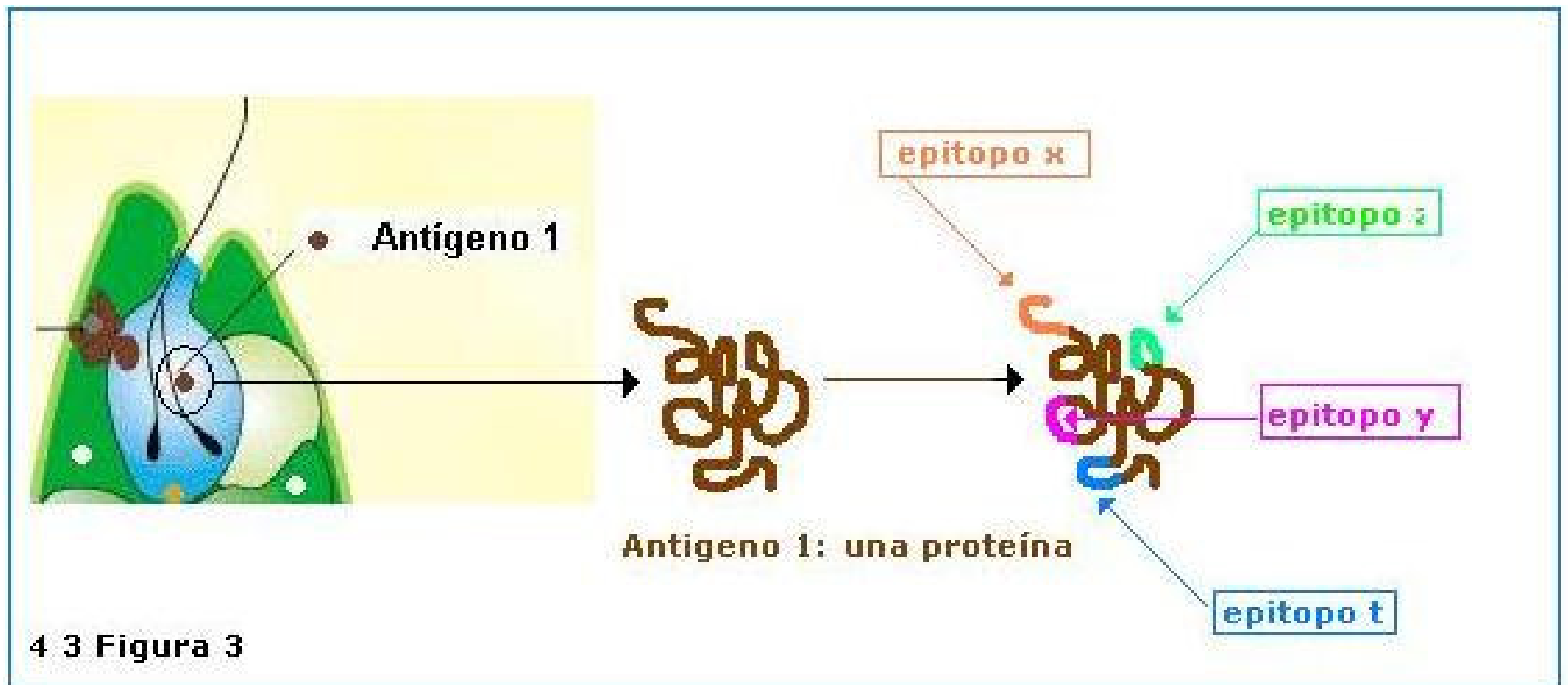


# Inmunidad innata



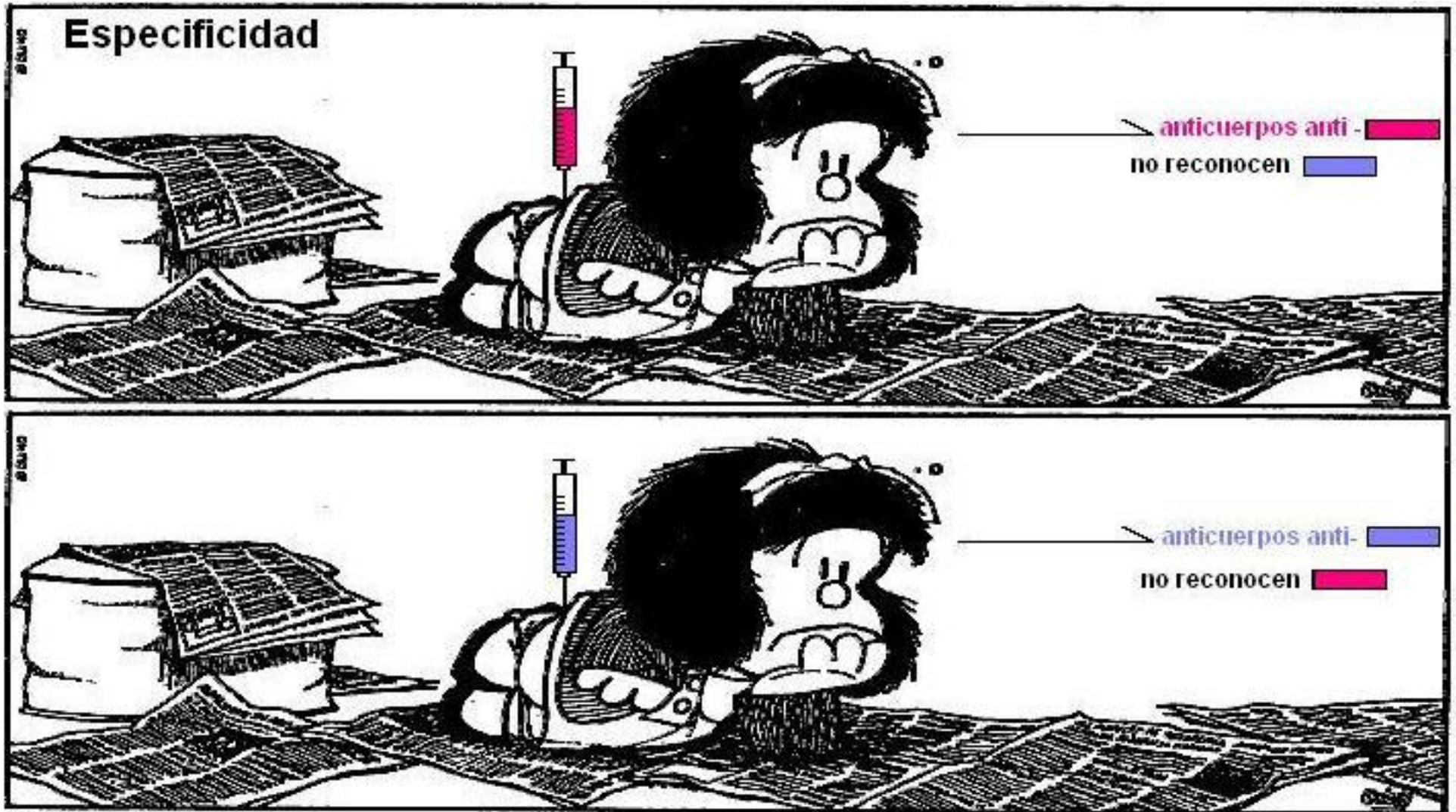


# Inmunidad adaptativa





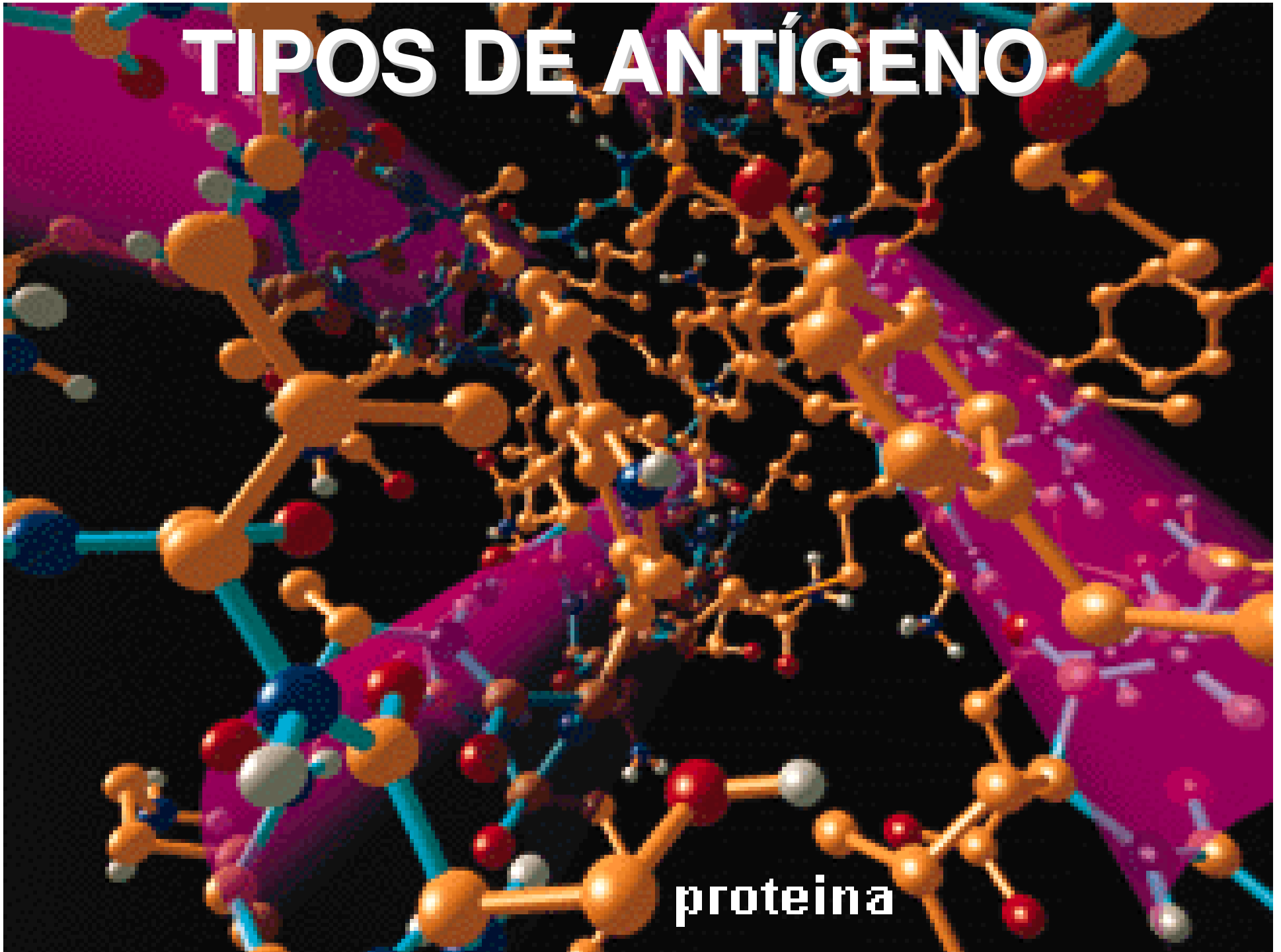
# LA RESPUESTA ES ESPECÍFICA



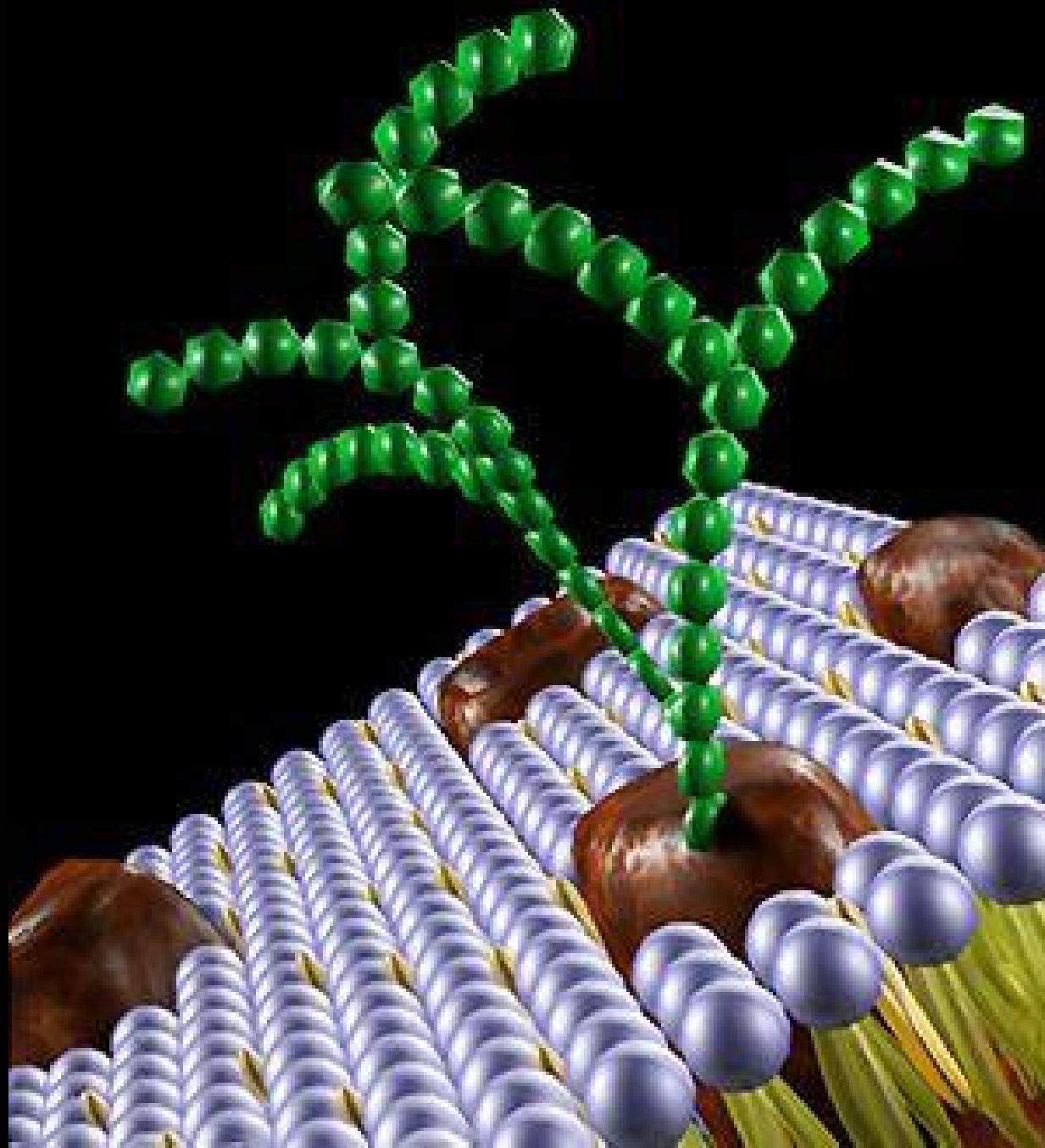
4.3 Fig. 5

# TIPOS DE ANTÍGENO

proteína

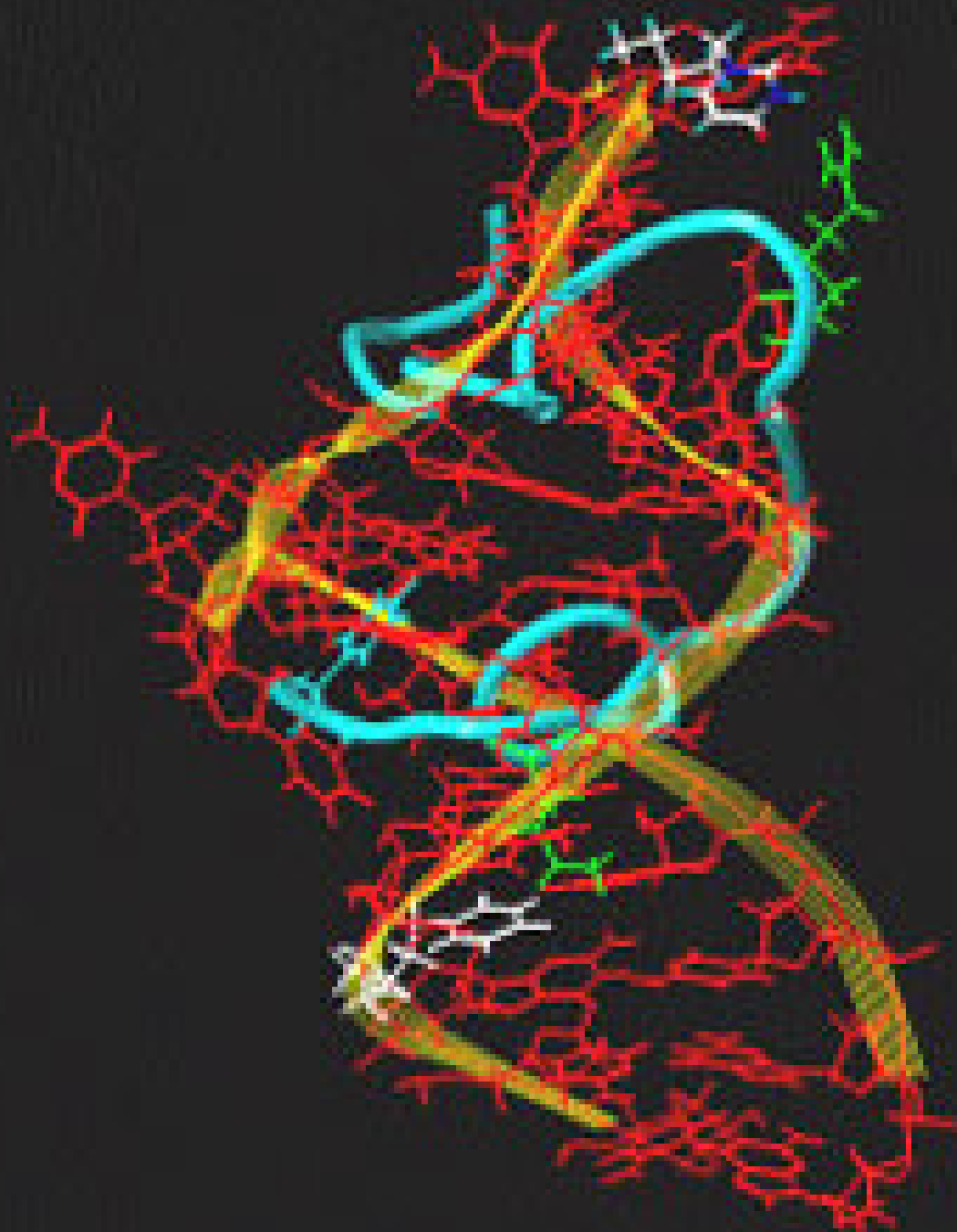


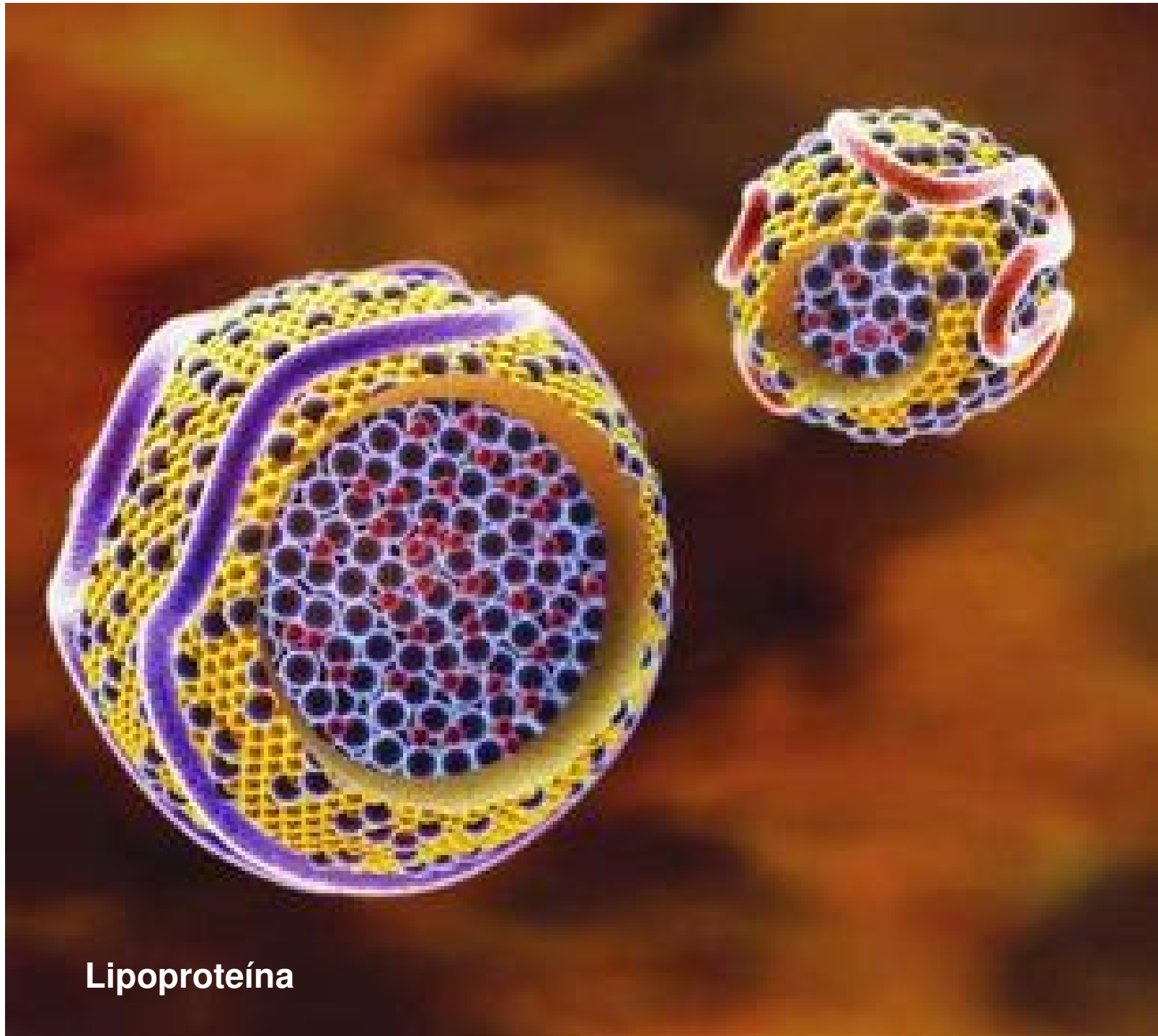
**glicoproteina**





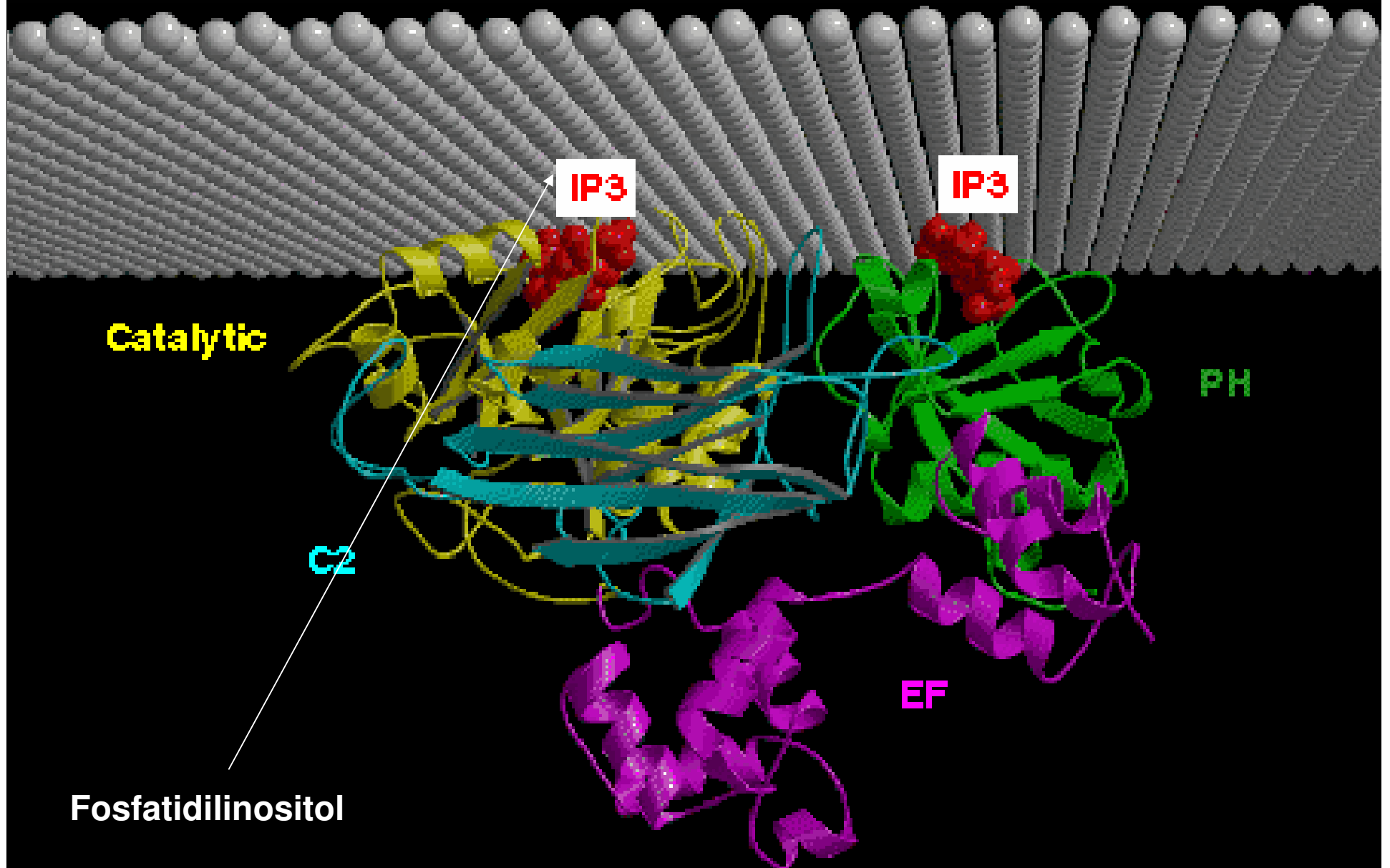
## Ribonucleoproteína

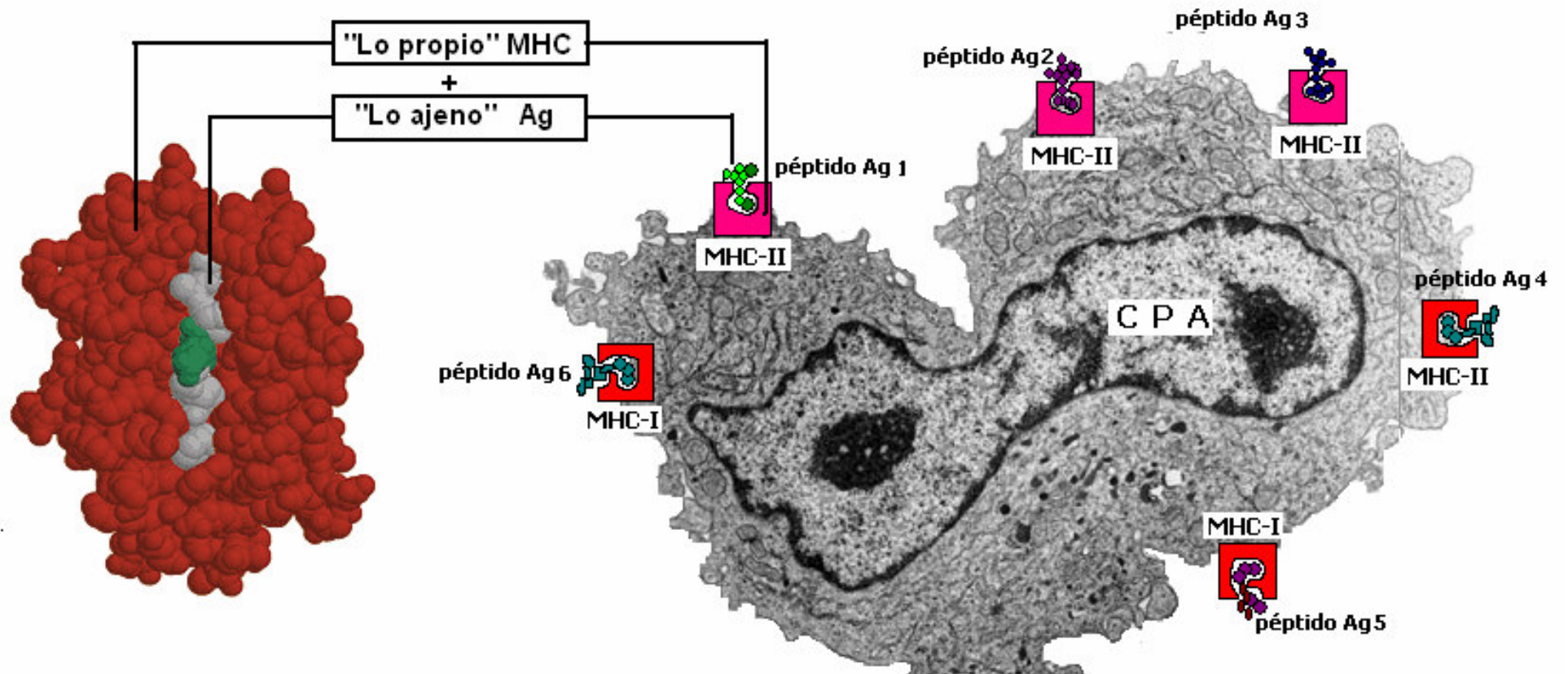


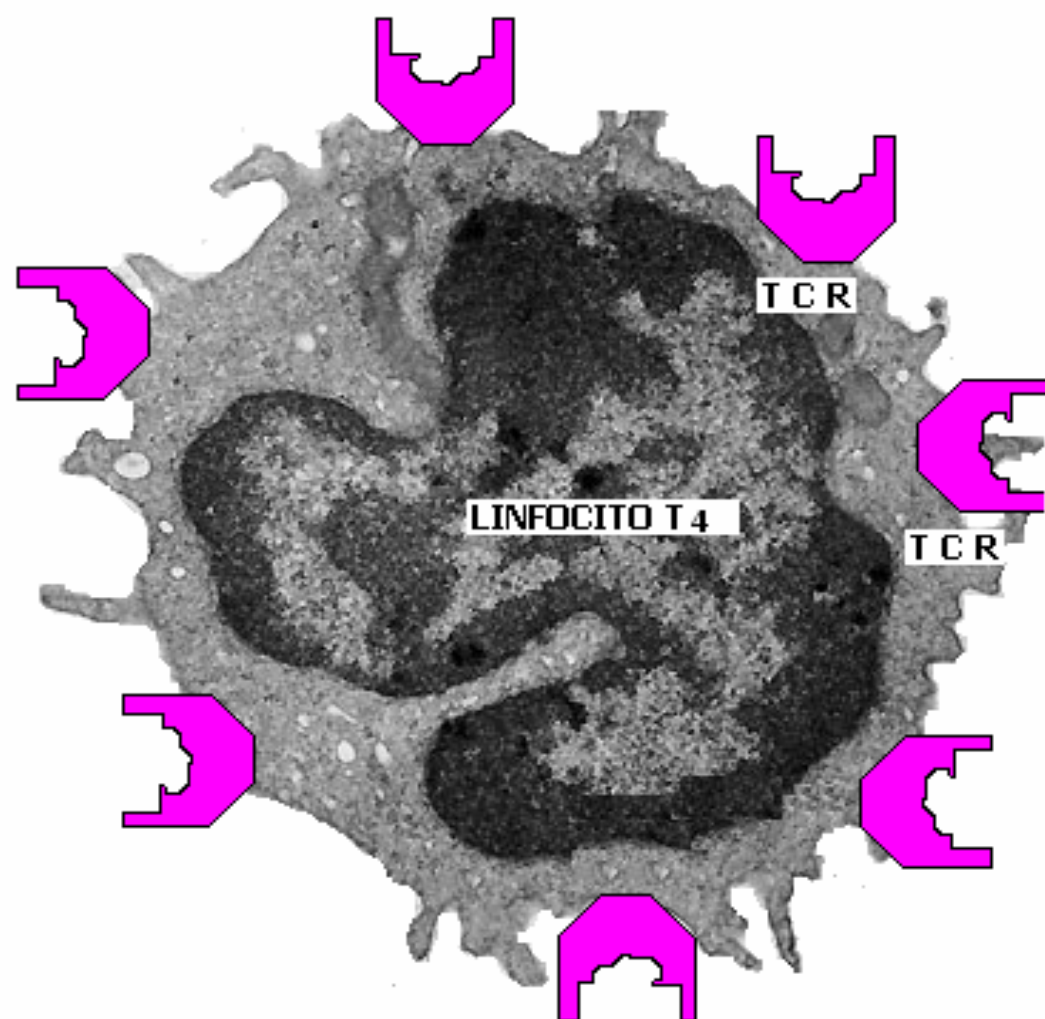


Lipoproteína

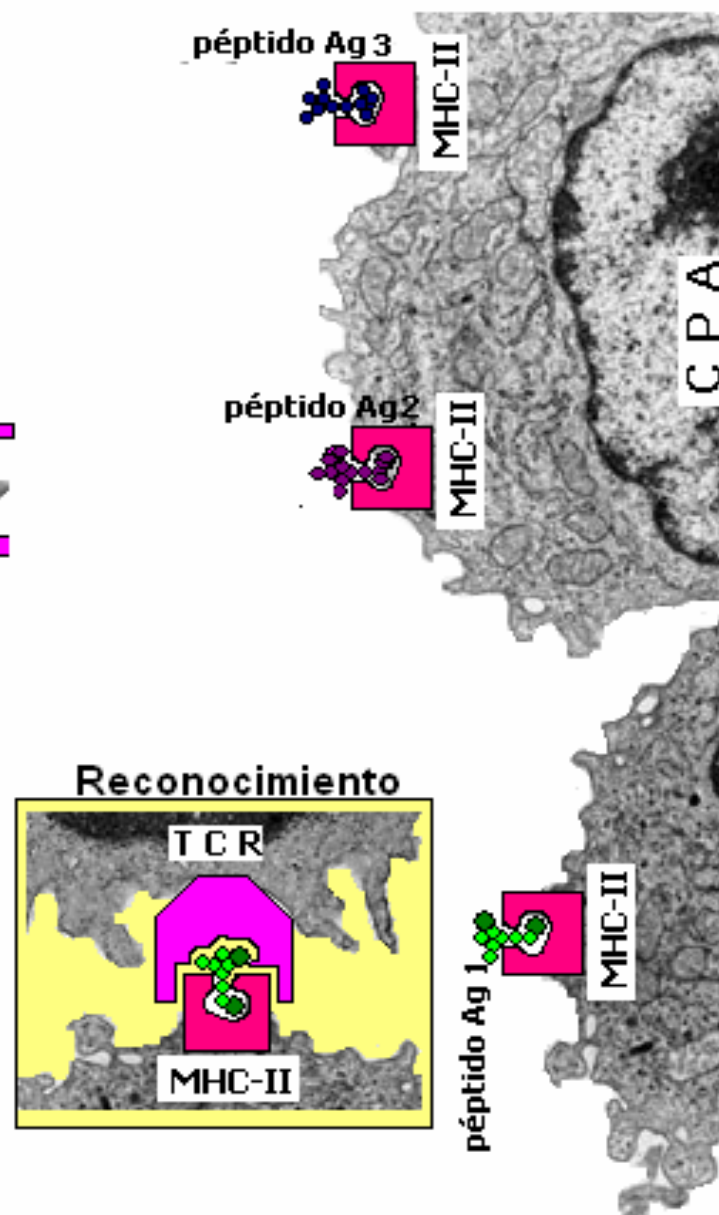
# LIPIDOS



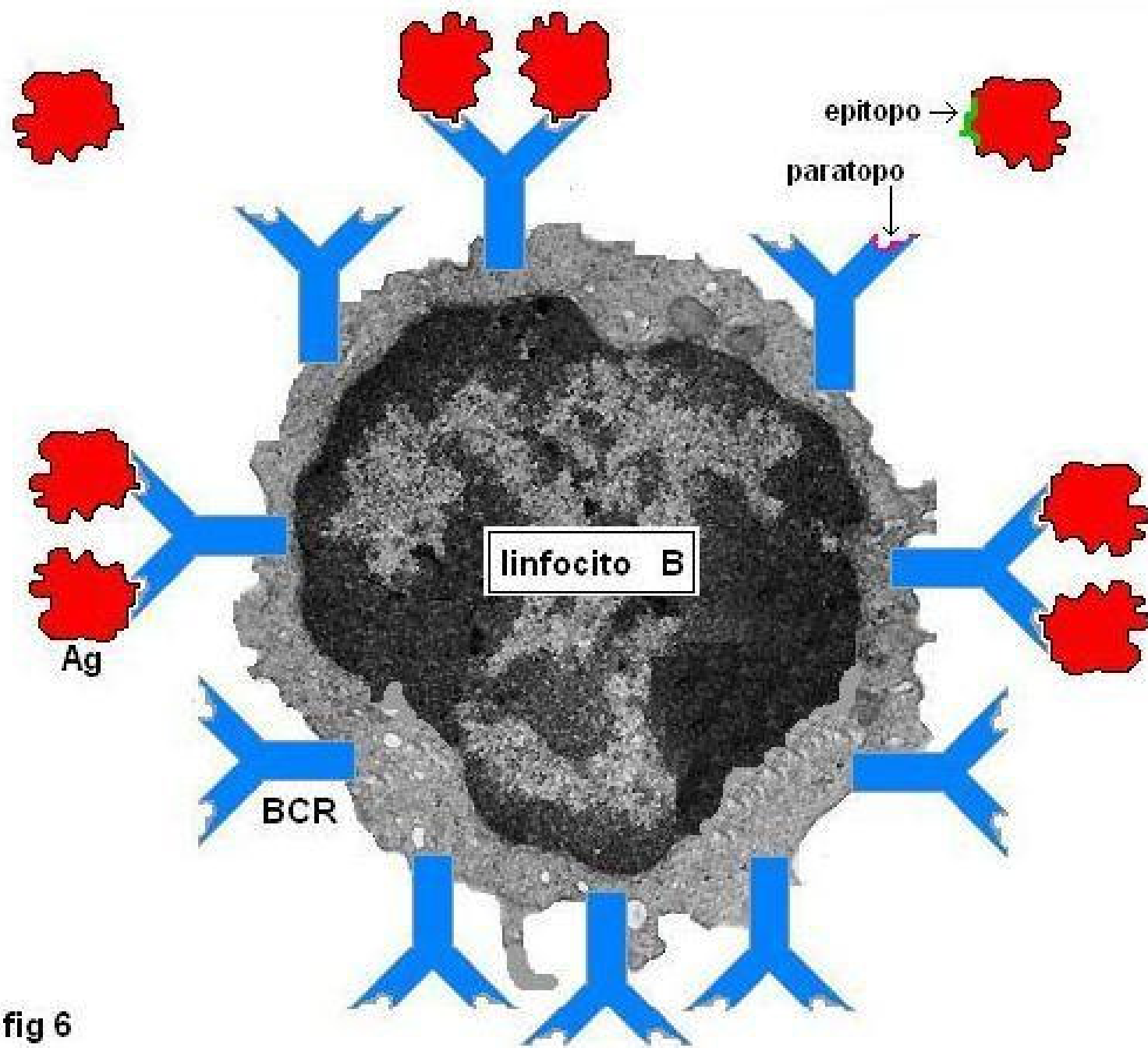




4 4 fig 13

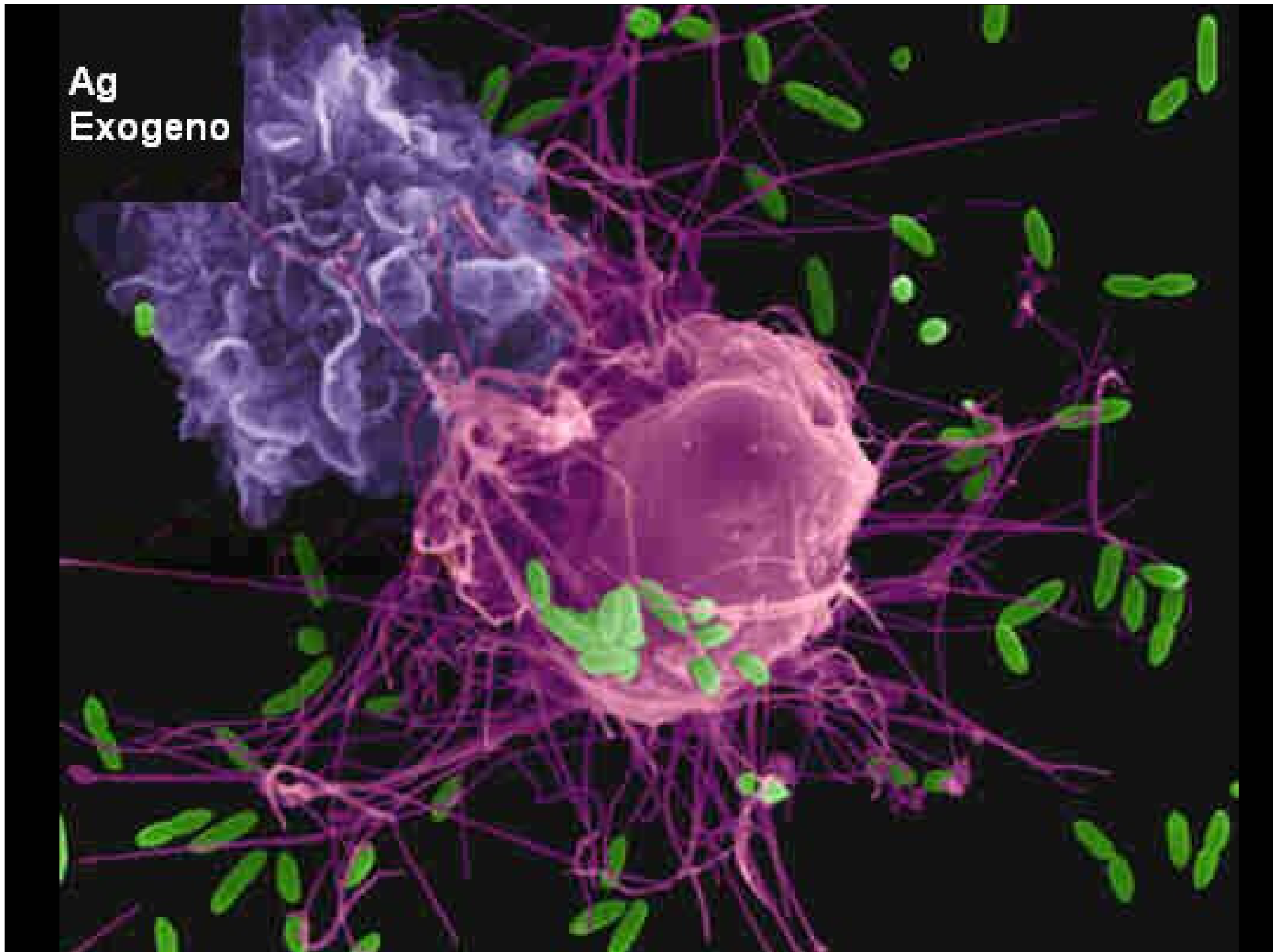


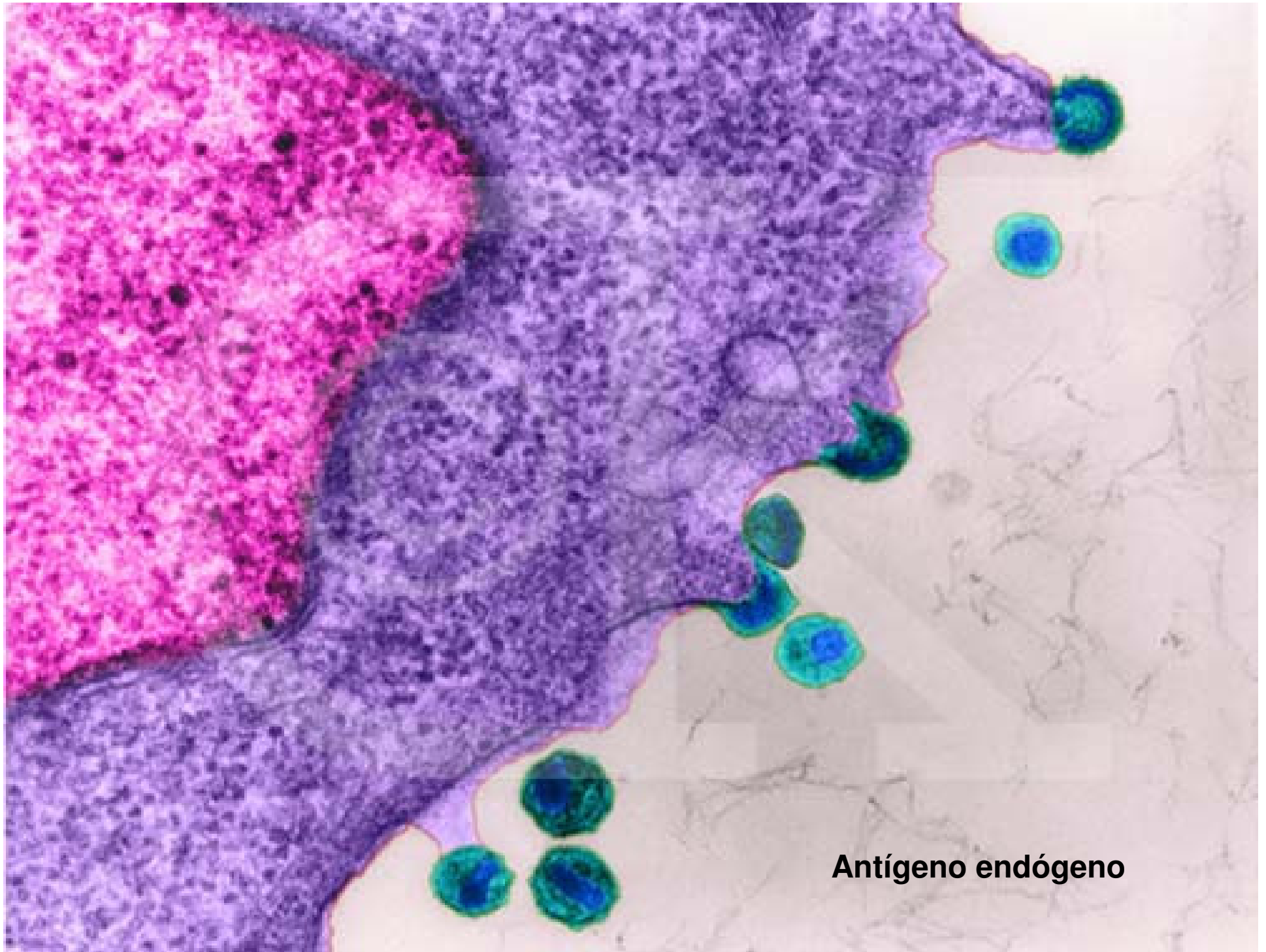




4 4 fig 6

Ag  
Exogeno





**Antígeno endógeno**

# ANTIGENOS EXOGENOS

- PROTEINAS E INCLUSO CELULAS INCORPORADAS DESDE EL EXTERIOR POR ALGUN MECANISMO DE ENDOCITOSIS ( FAGOCITOSIS, PINOCITOSIS O ENDOCITOSIS MEDIADA POR RECEPTOR)
- SON PROCESADAS EN LOS ENDOSOMAS Y GENERAN PEPTIDOS QUE SE UNEN A LAS MOLECULAS MHC CLASE II EN CPA PROFESIONALES QUE LOS PRESENTAN A LOS LINFOCITOS T CD4

# CELULAS PRESENTADORAS DE ANTÍGENO PROFESIONALES

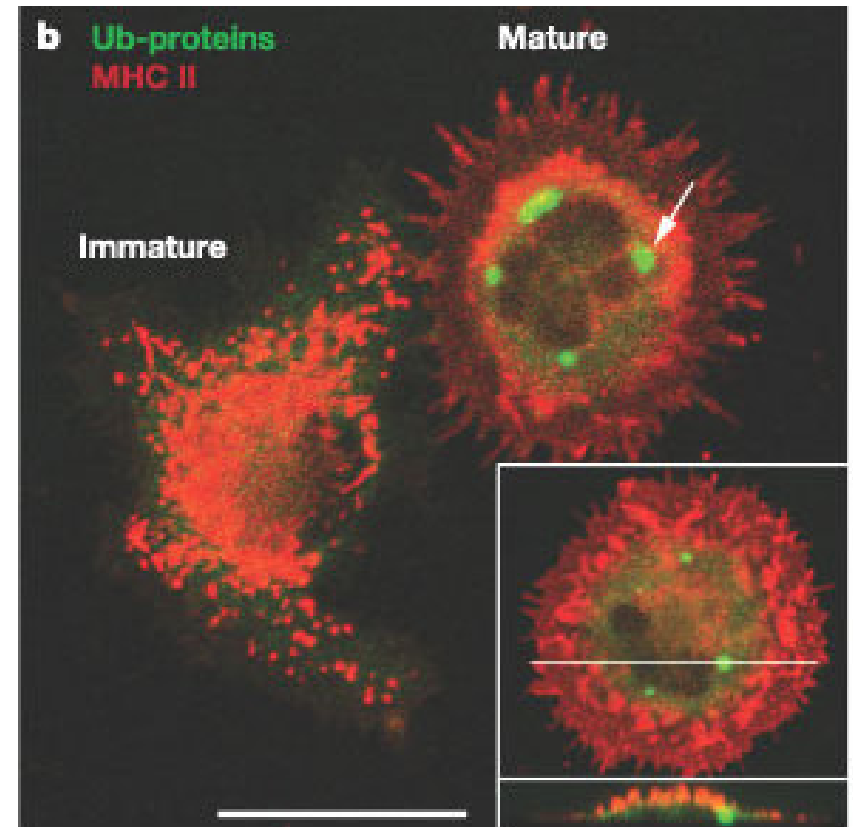
- Células dendríticas
- Macrófagos
- Linfocitos B



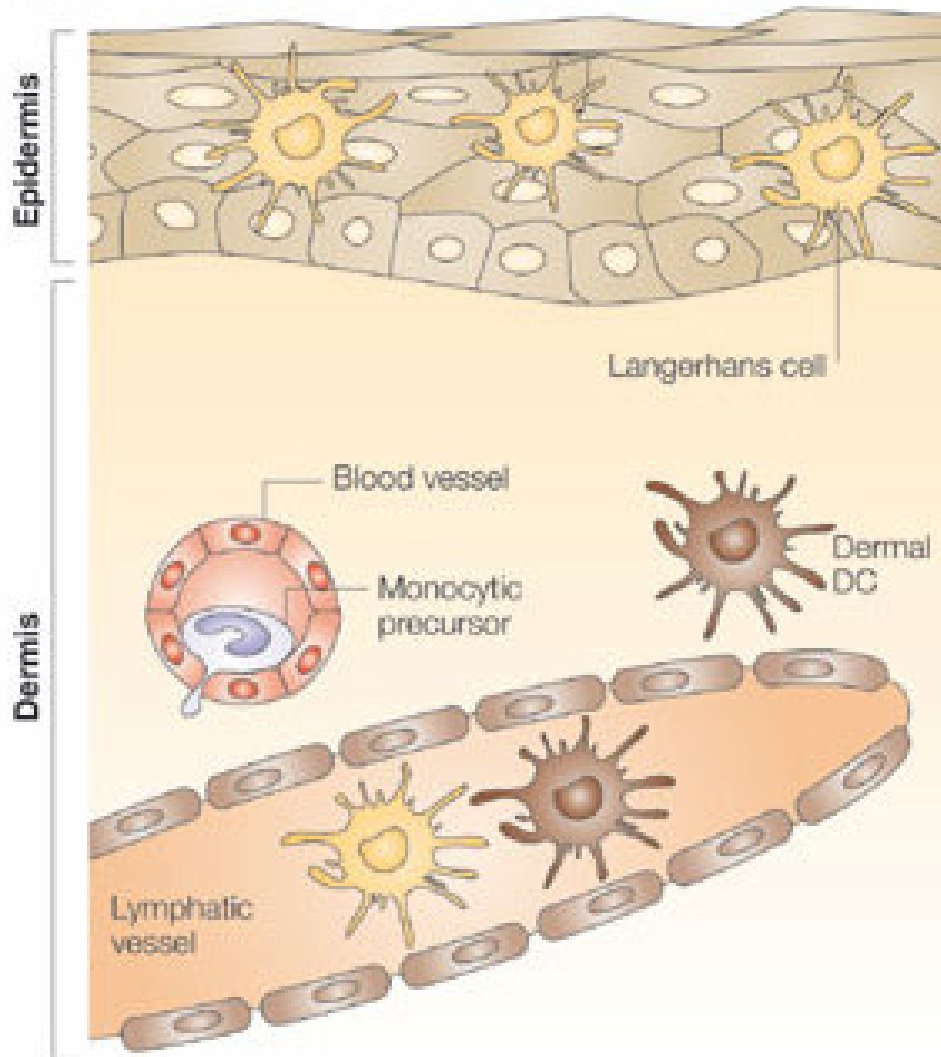
## CELULAS DENDRITICAS



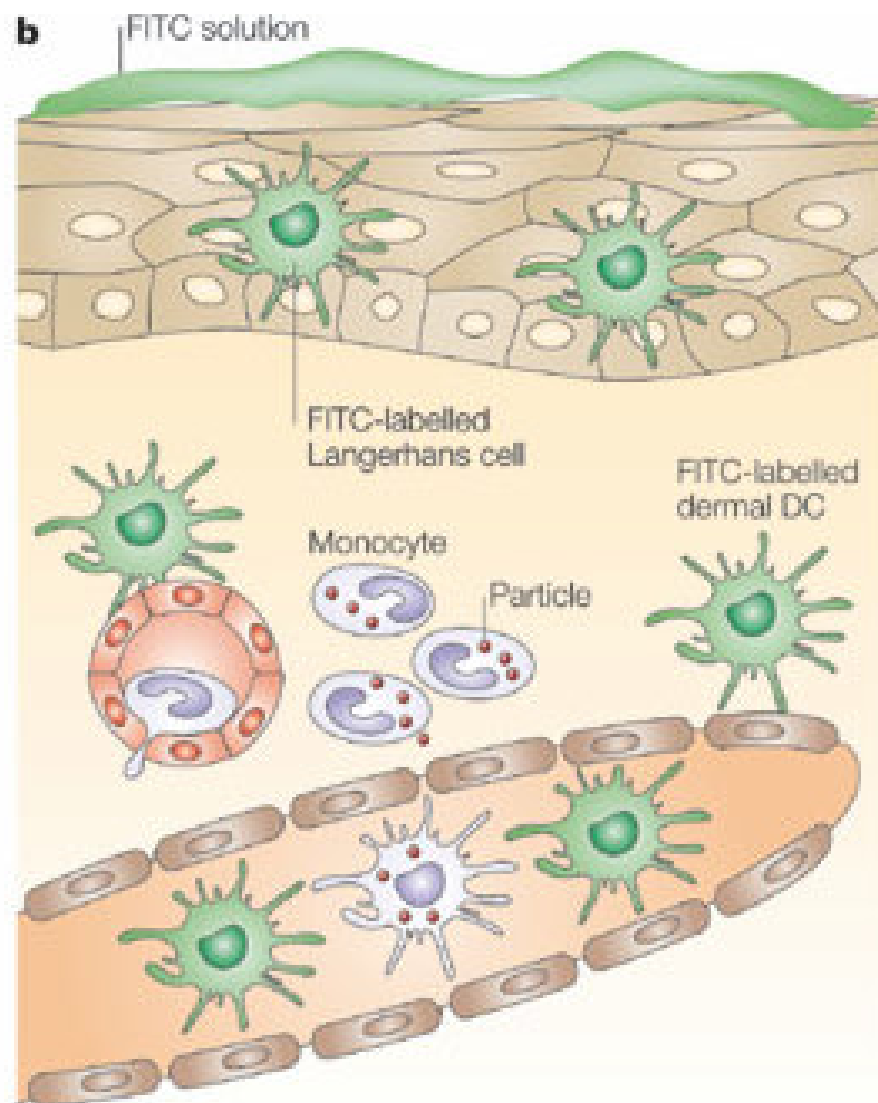
Langerhans cells form a network in the epidermis. In this section, the Langerhans cells have been stained with a monoclonal antibody to HLA-DR.

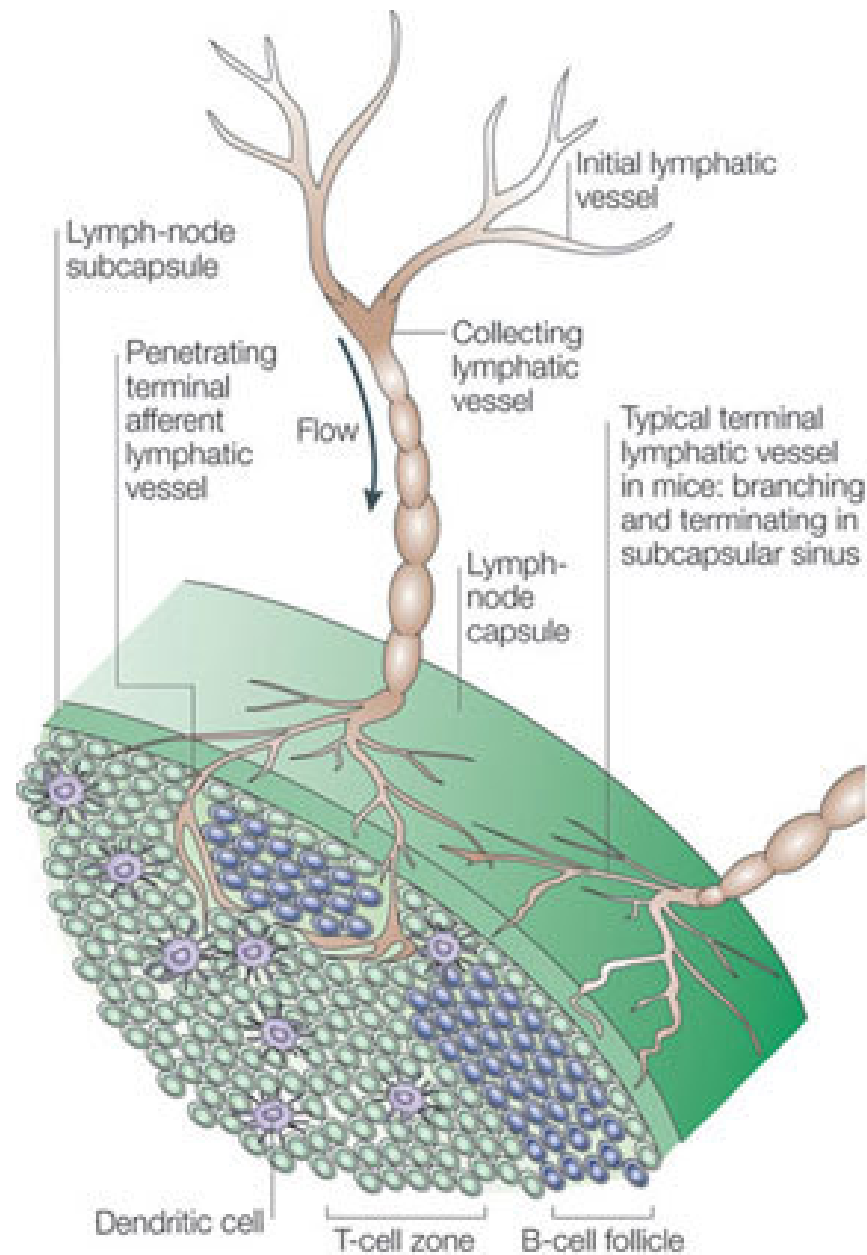


**a**



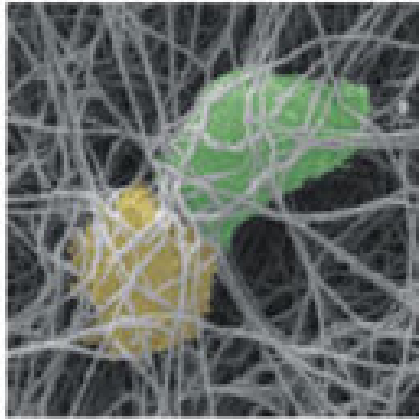
**b**



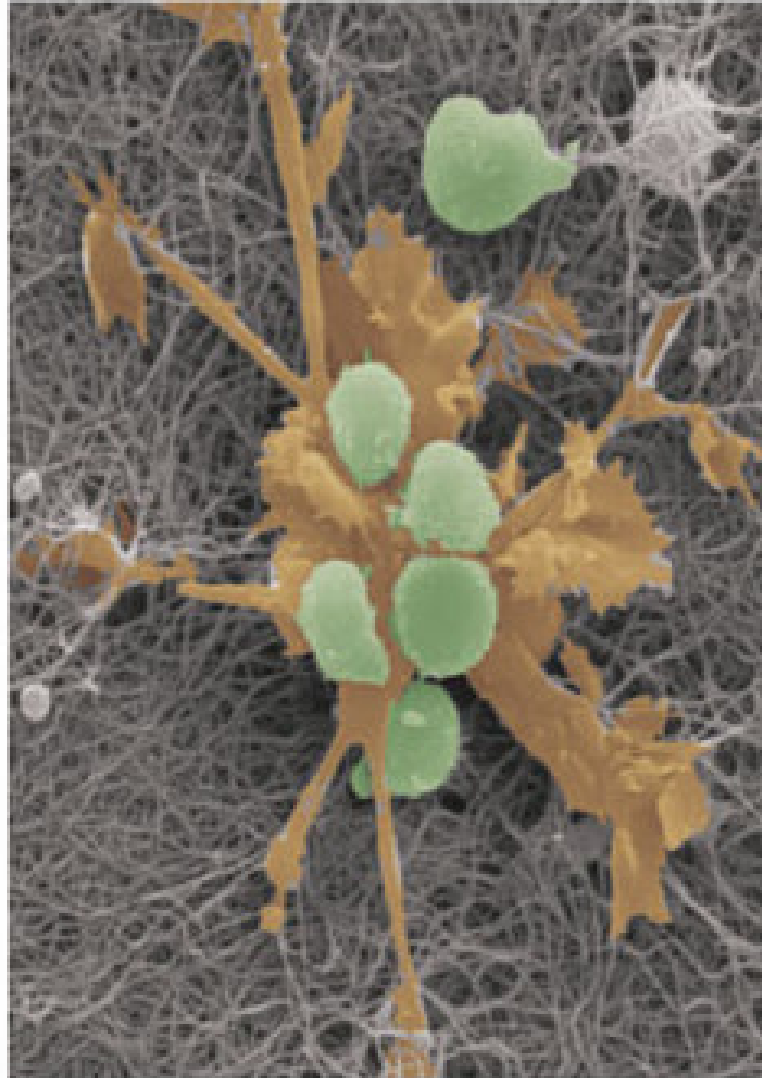


# Relaciones de reconocimiento específico entre linfocito T y CPA o célula blanco co-cultivadas en matriz de colágeno

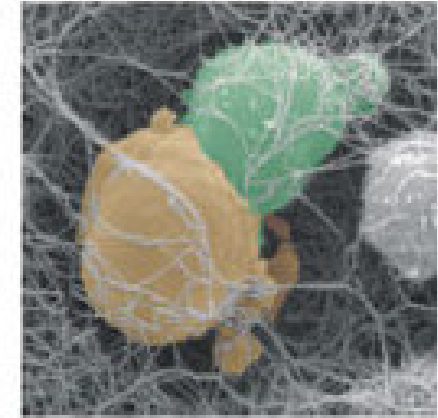
linfocito T en reposo



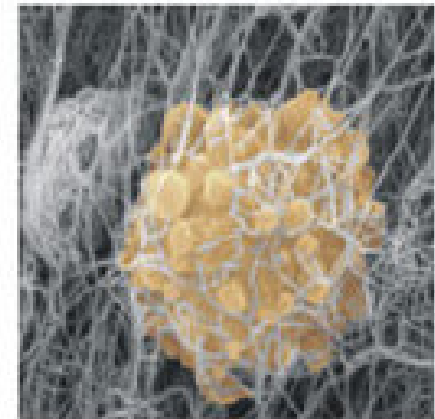
celula dendriticas maduras



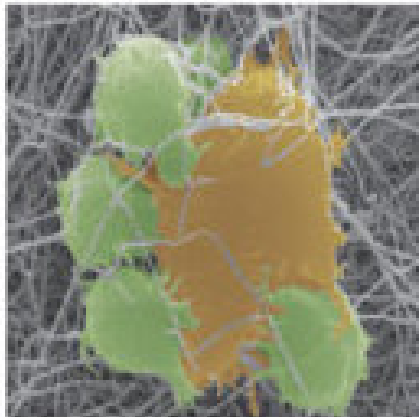
células diana

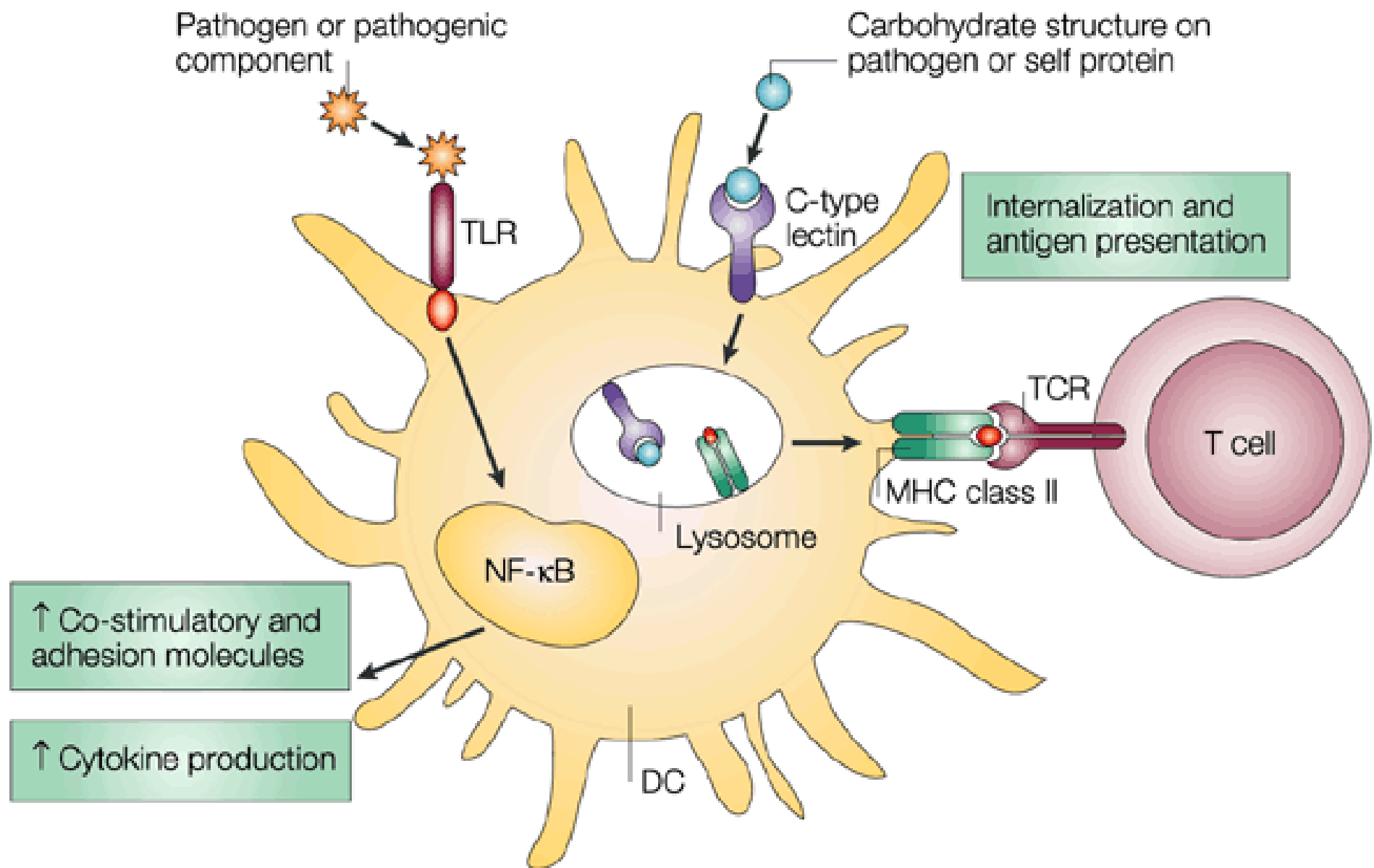


apoptosis

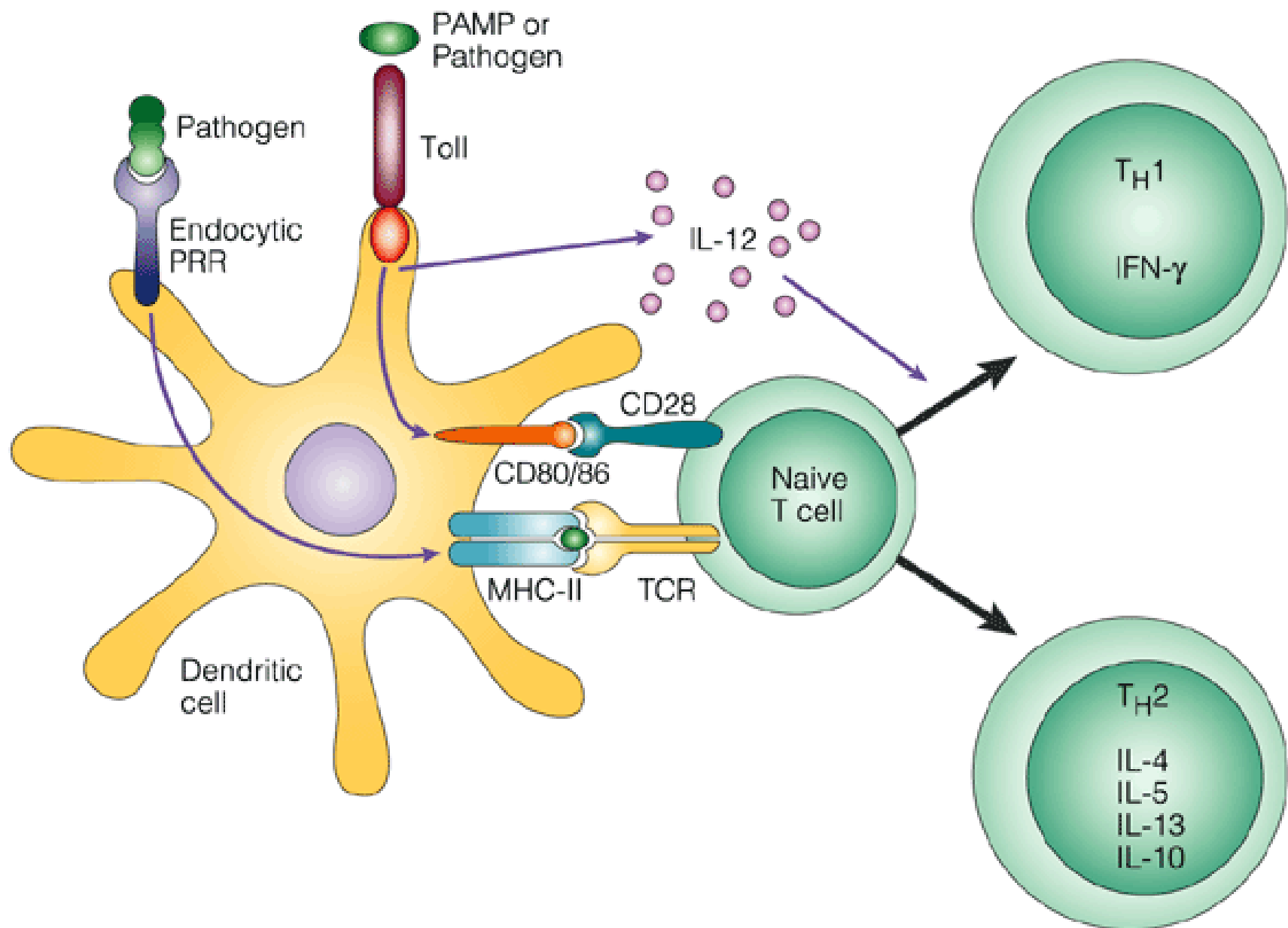


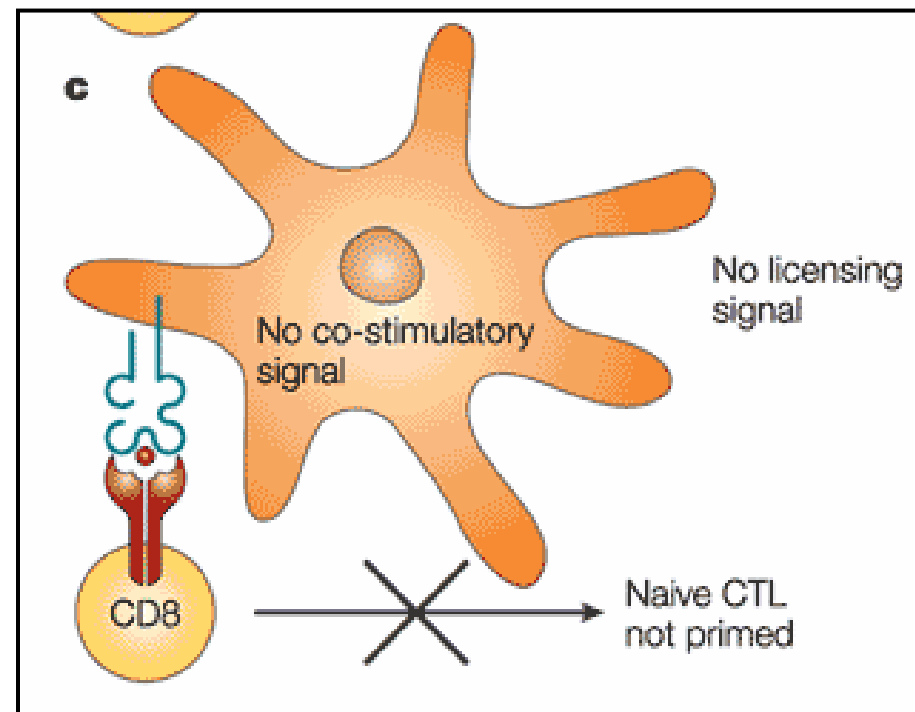
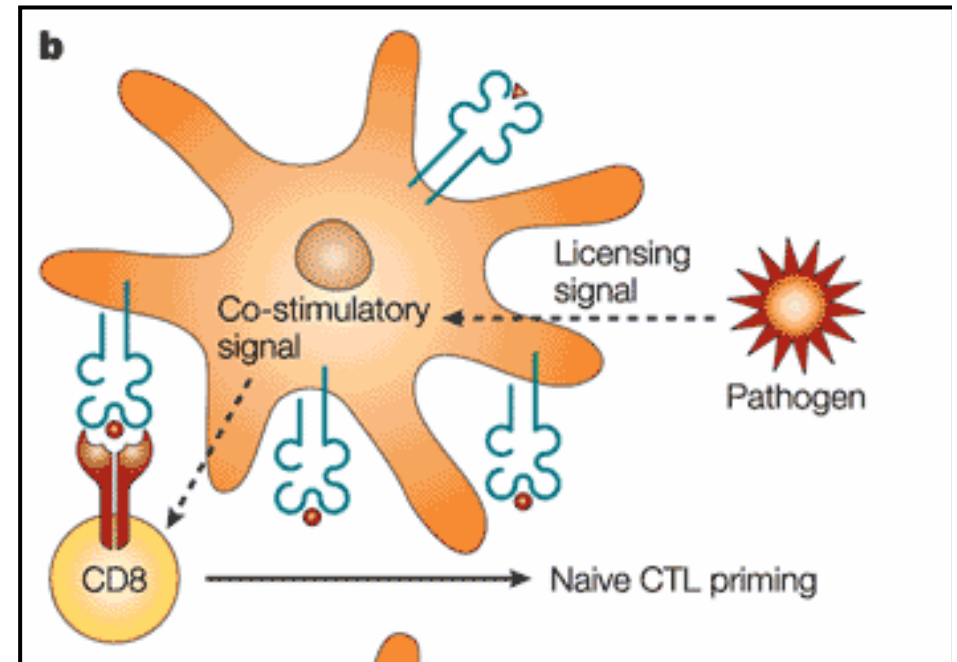
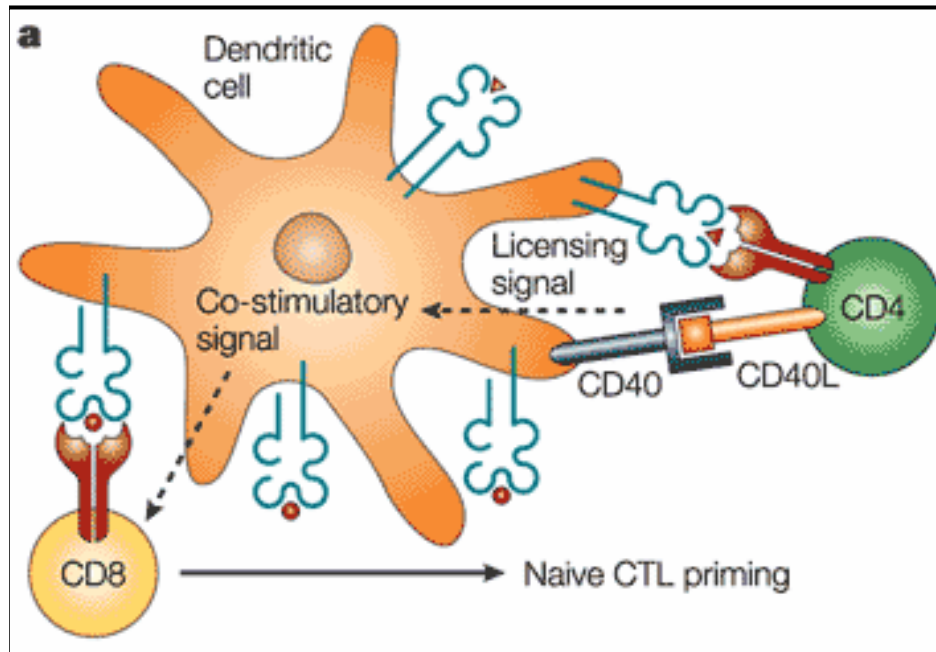
linfocitos T activados

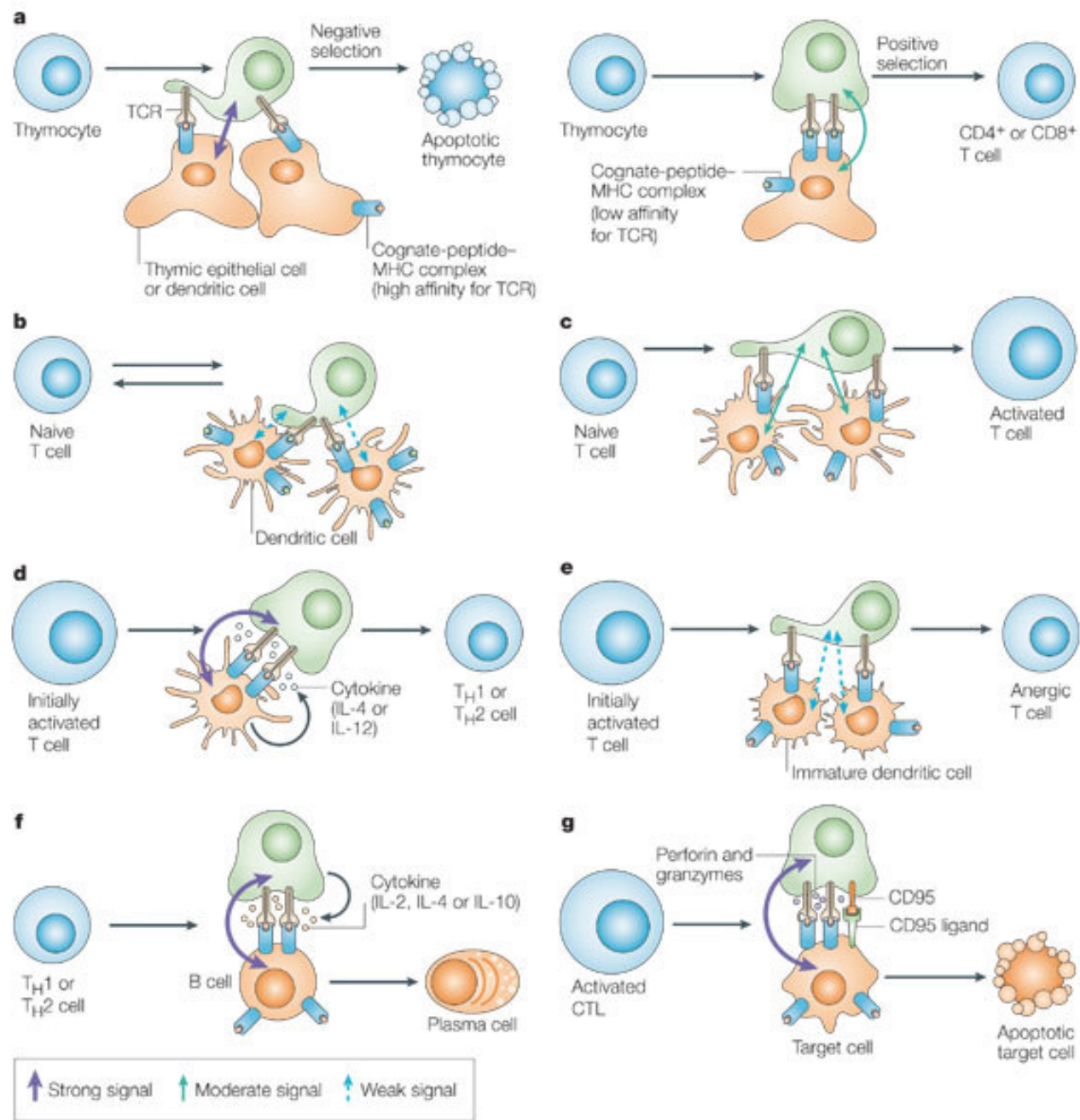




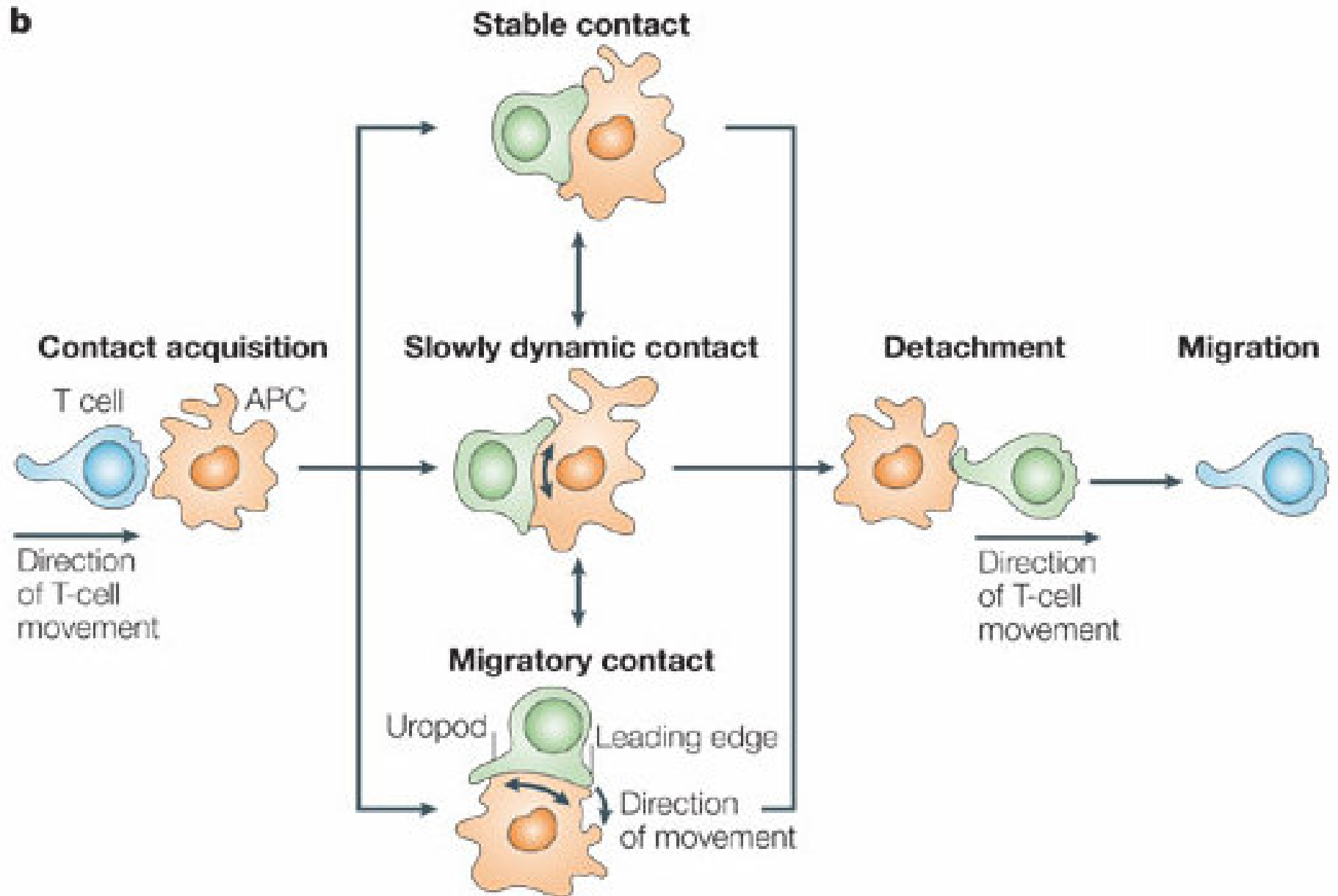




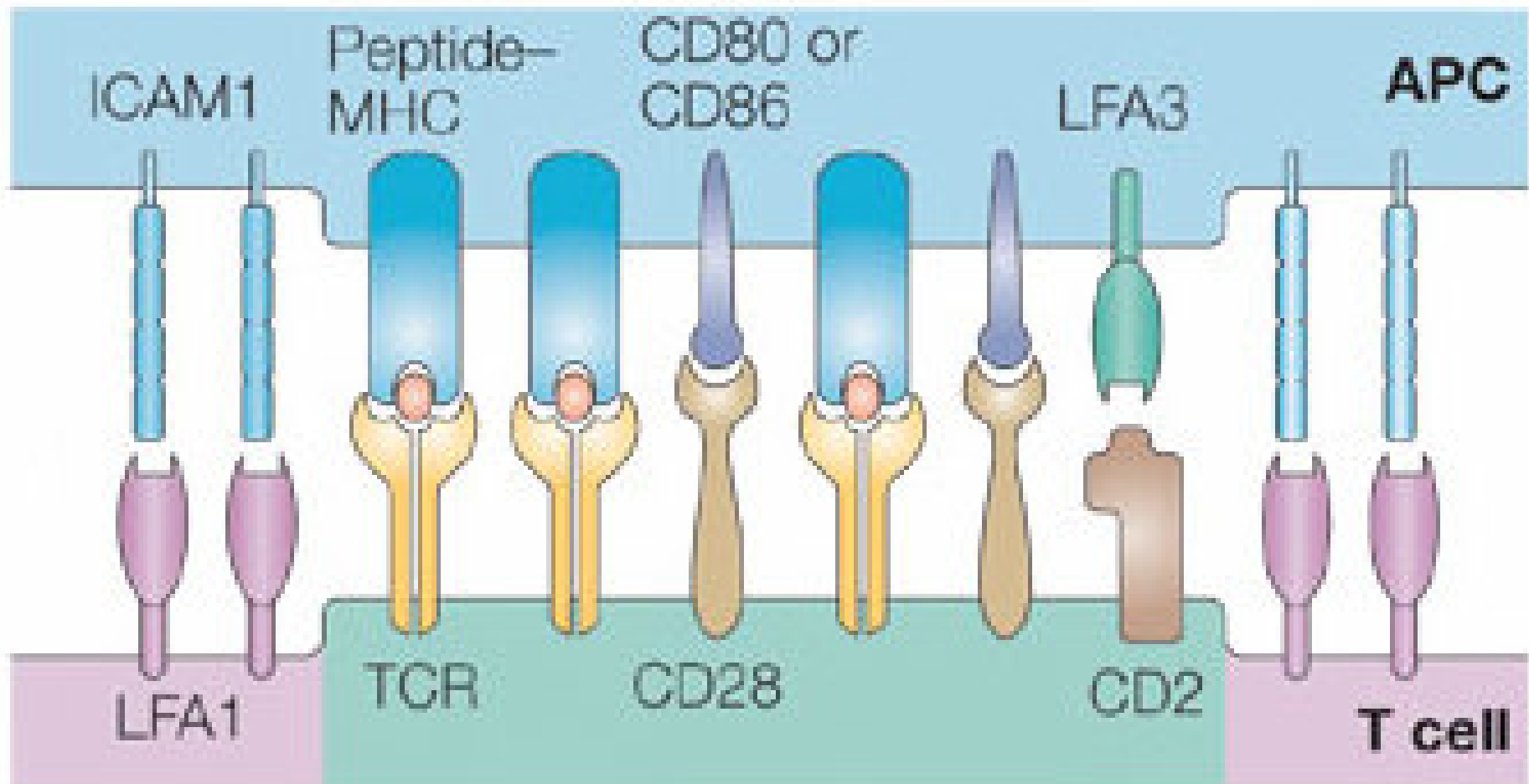




# Contactos durante el reconocimiento

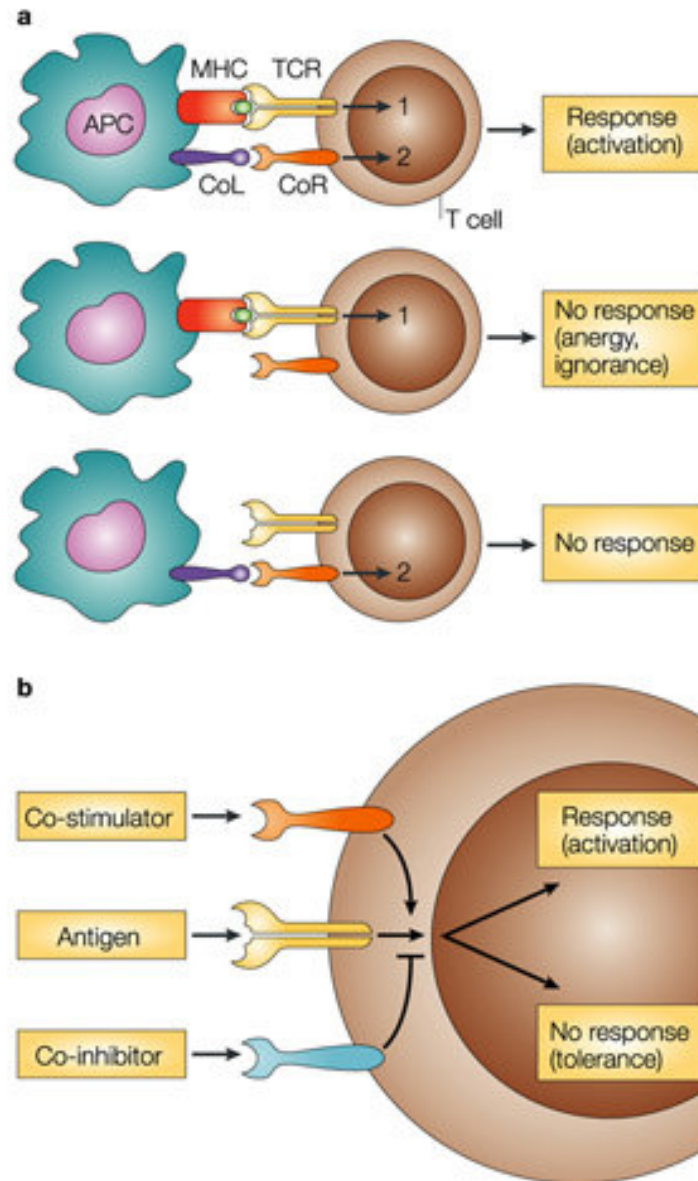


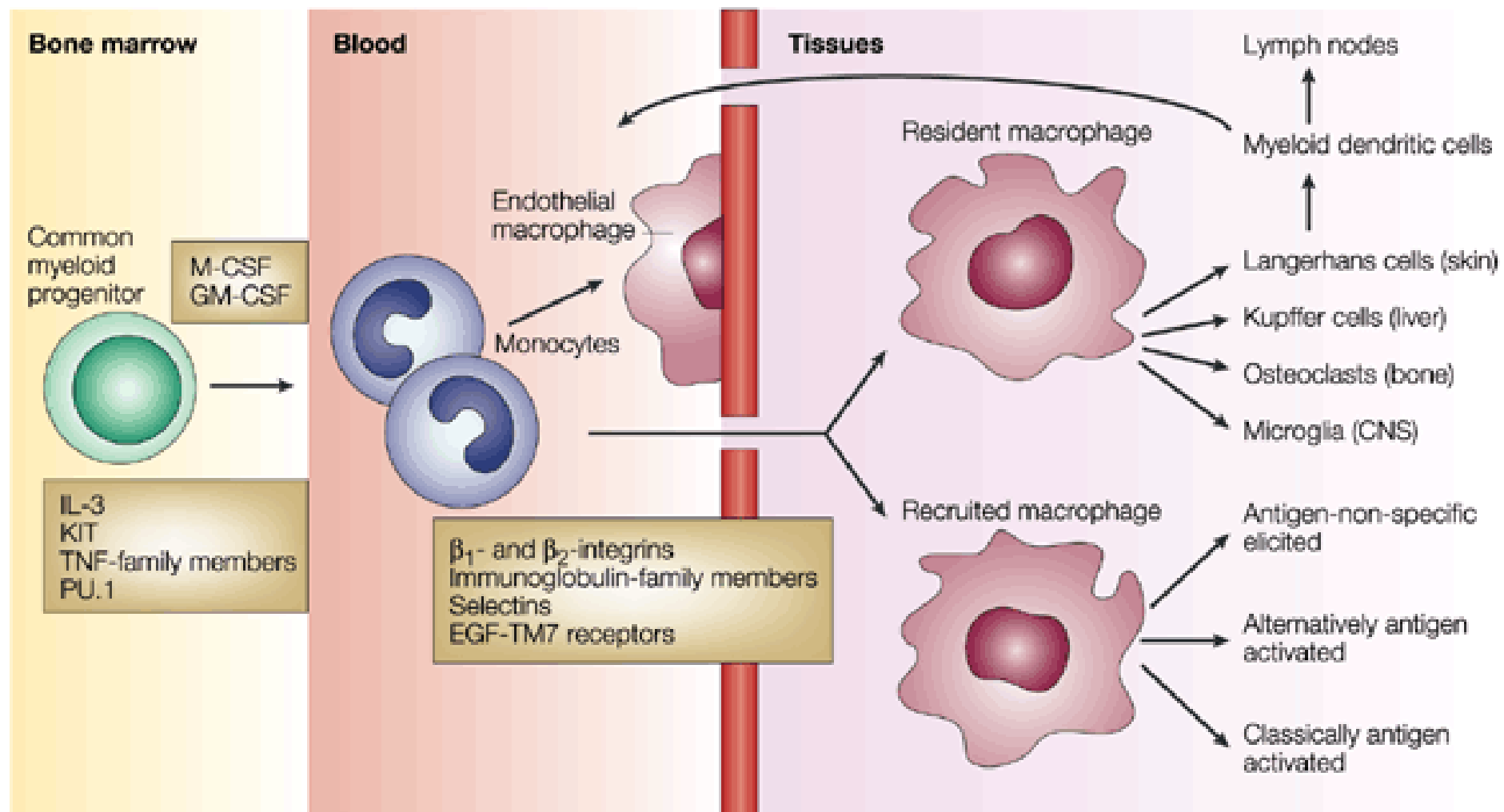
# Sinapsis inmunológica

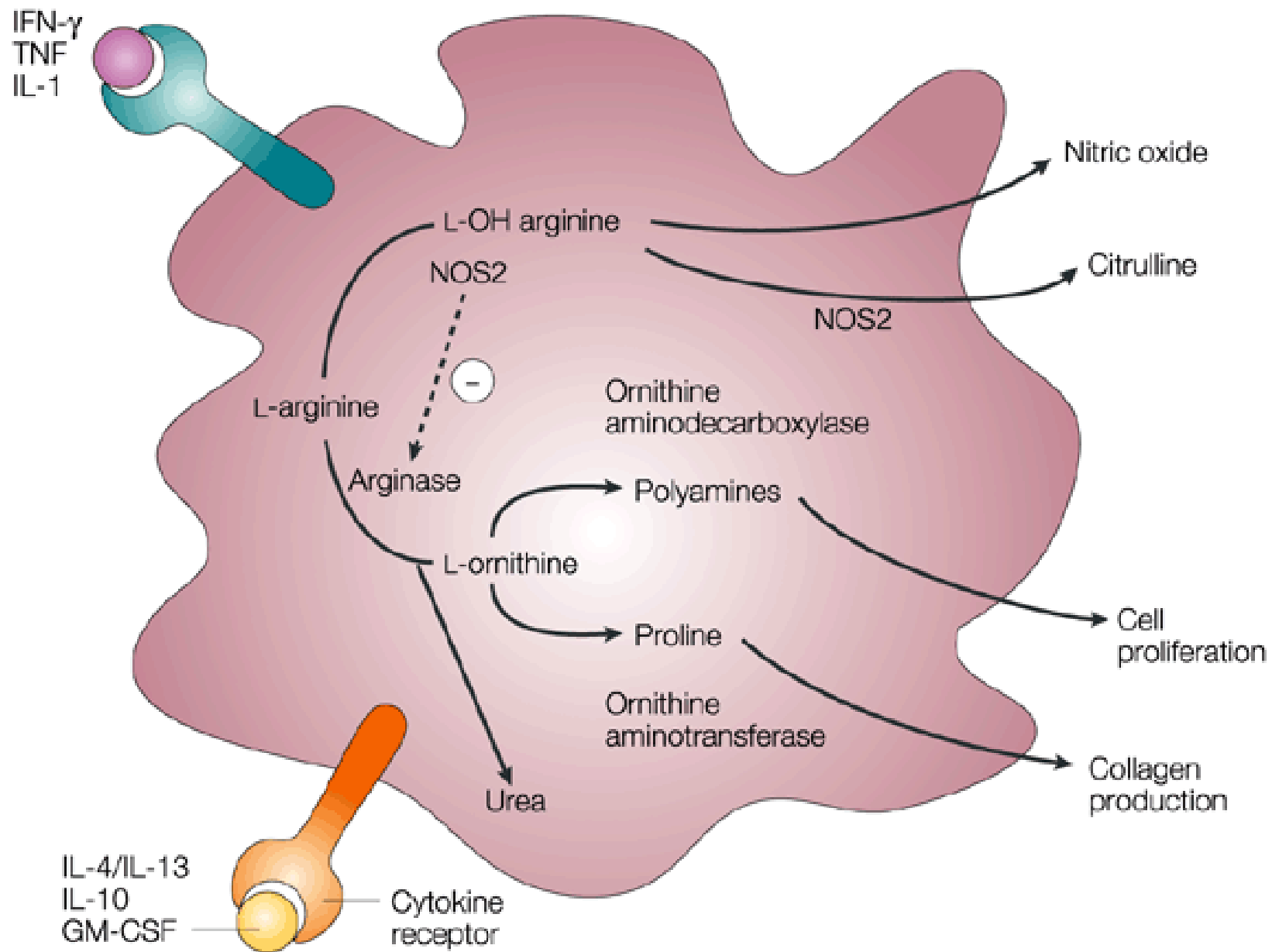


a) en el reconocimiento de antígeno



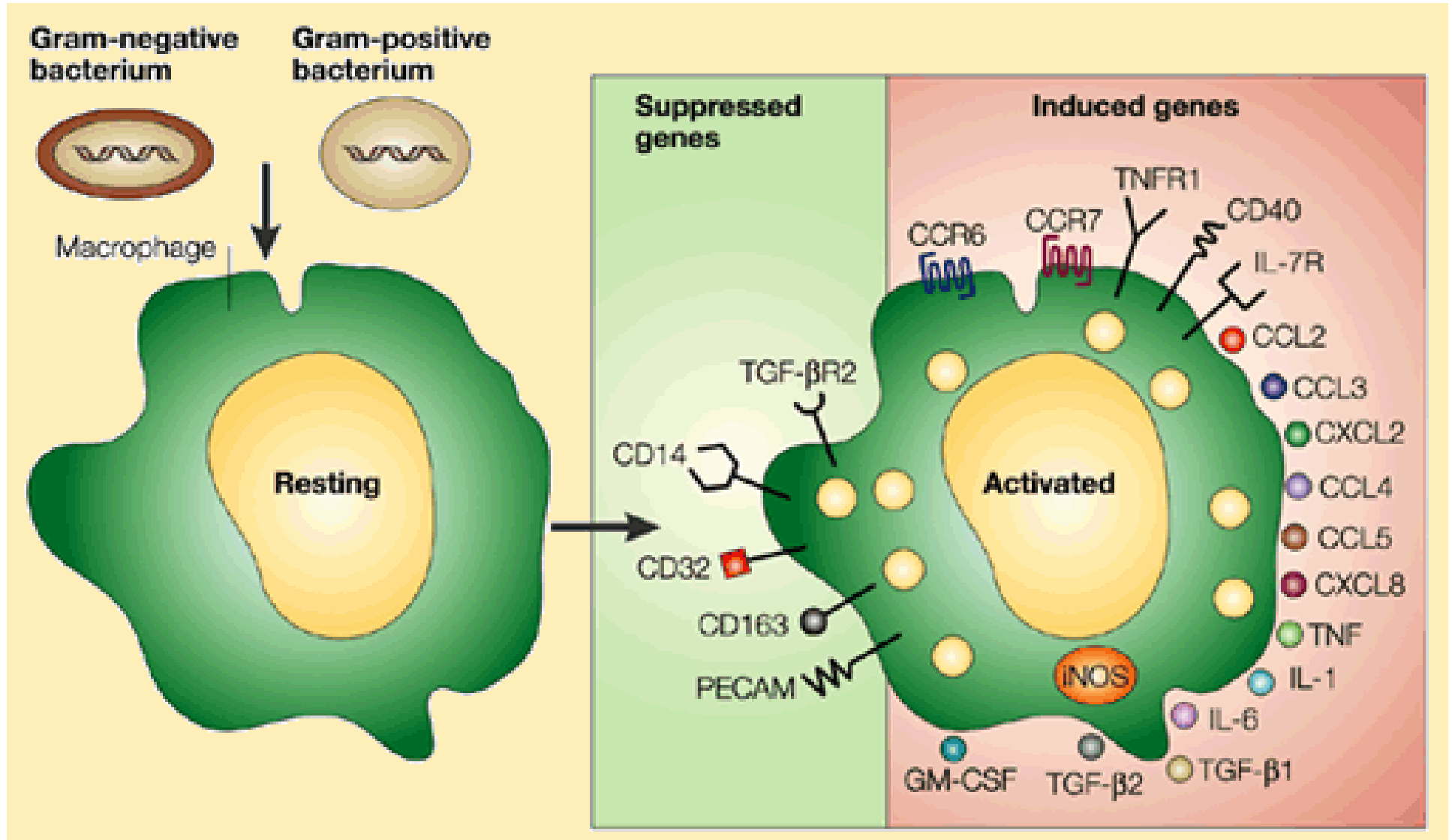


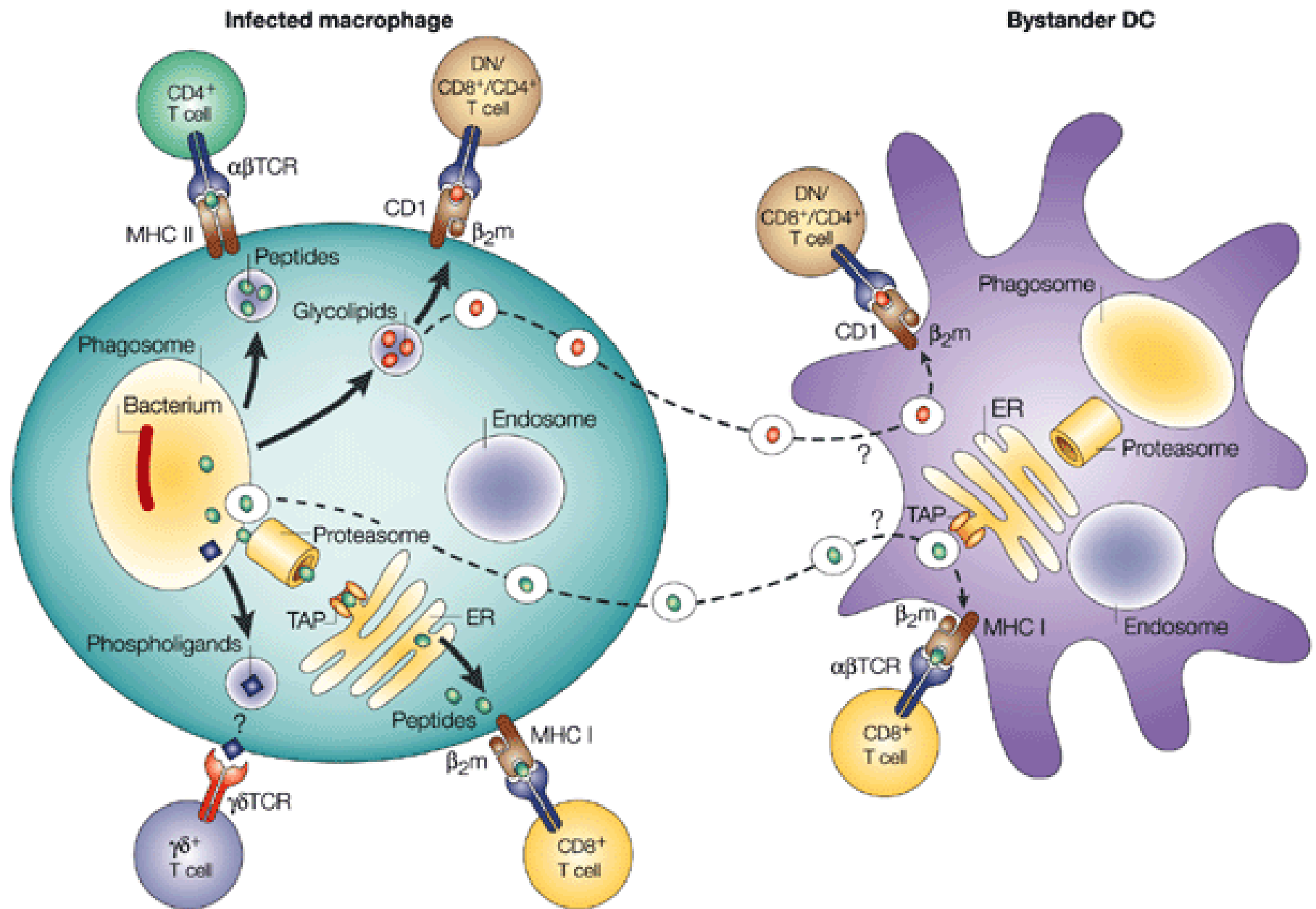




## Ag-Exógeno – Célula presentadoras de antígeno CPA

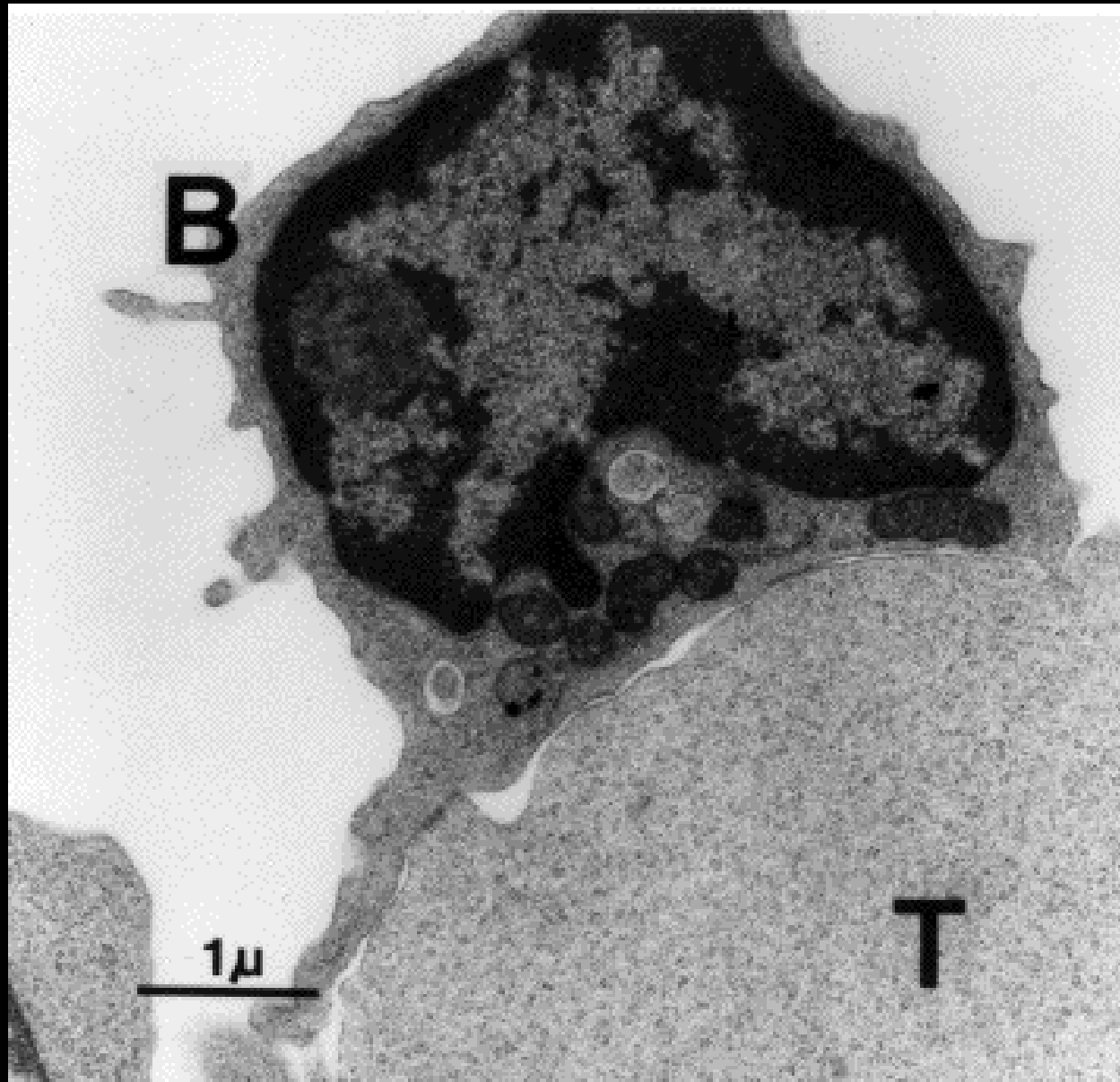
### MACROFAGO

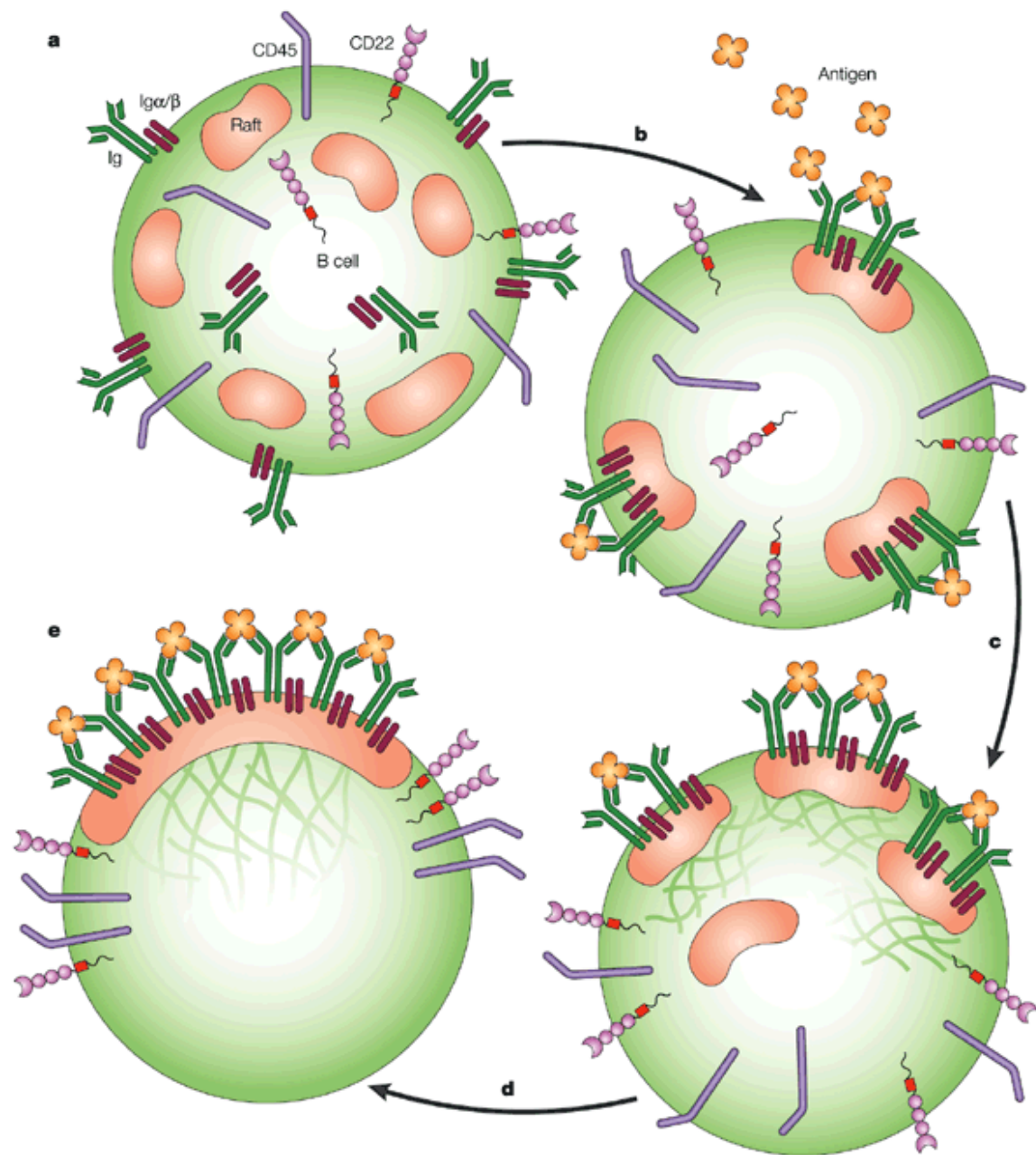




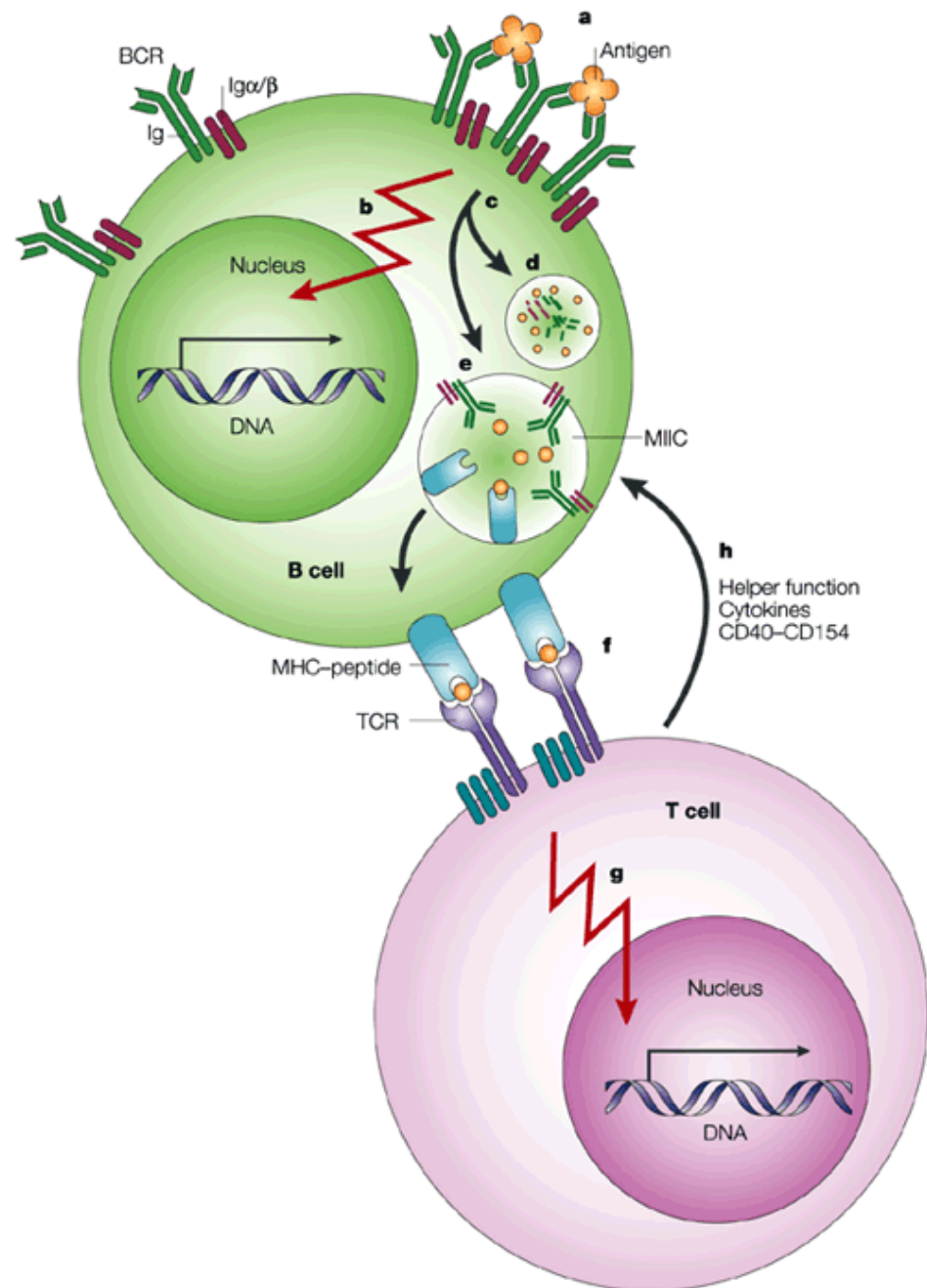
## Ag-Exógeno – Célula presentadoras de antígeno CPA

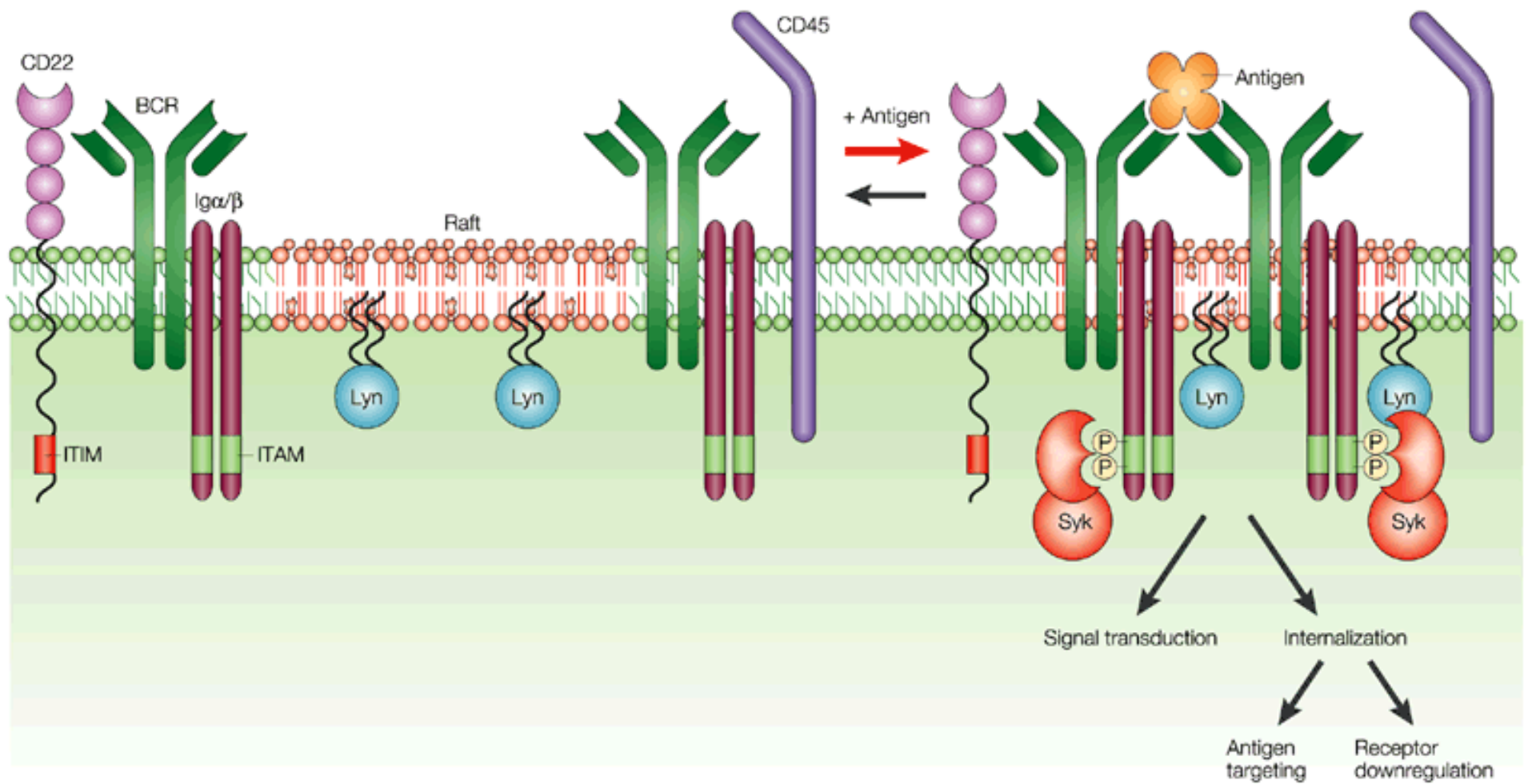
LINFOCITO B

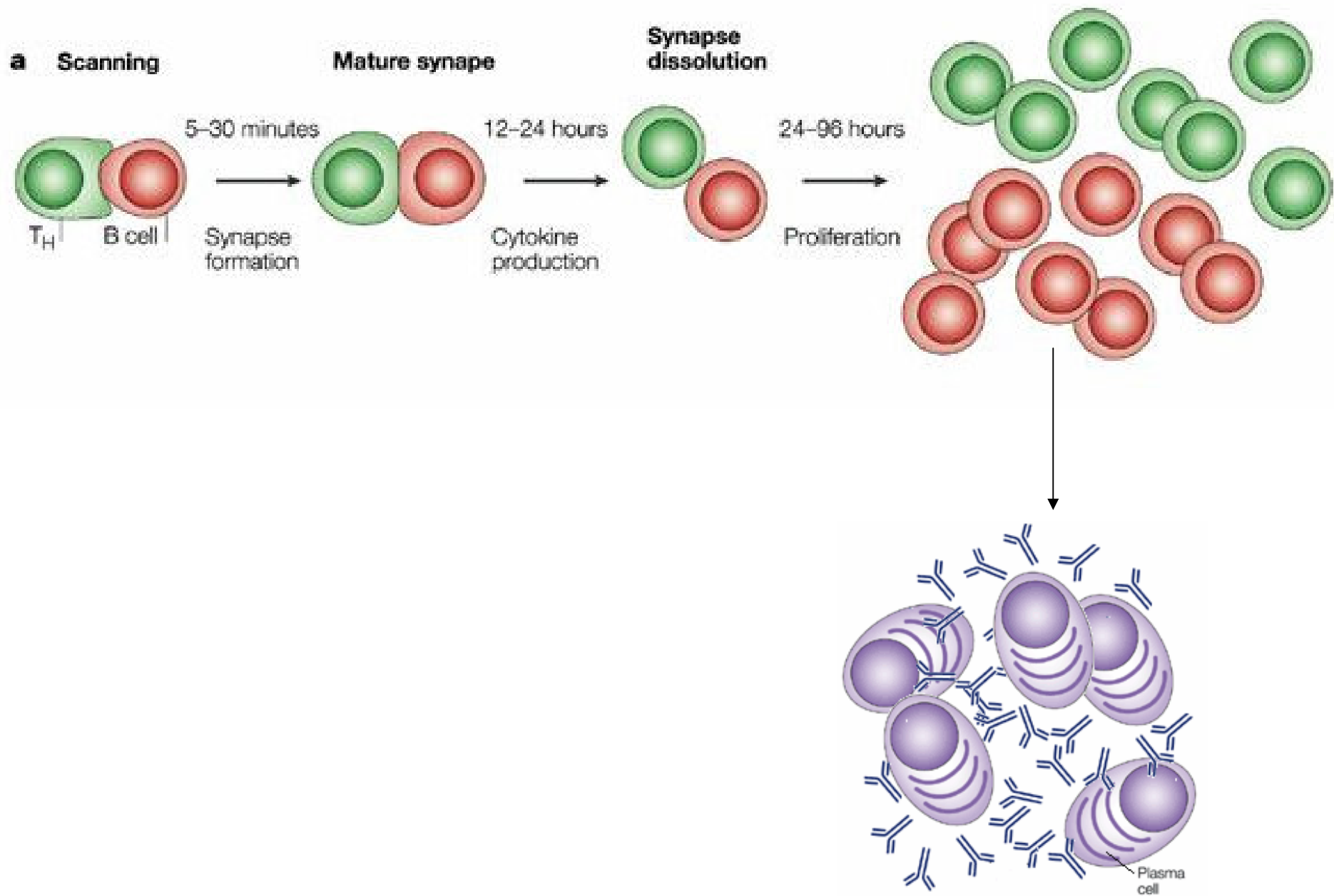


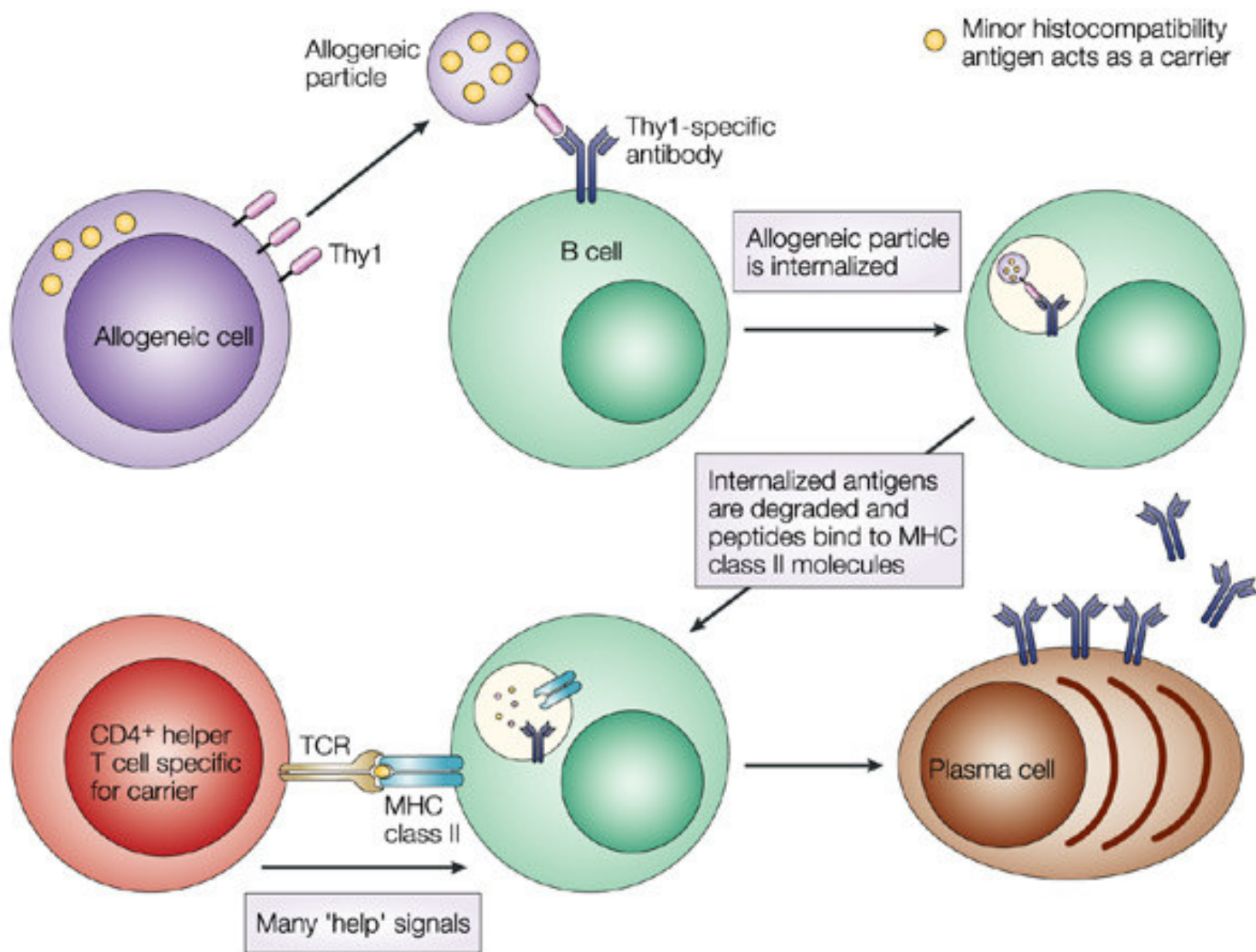


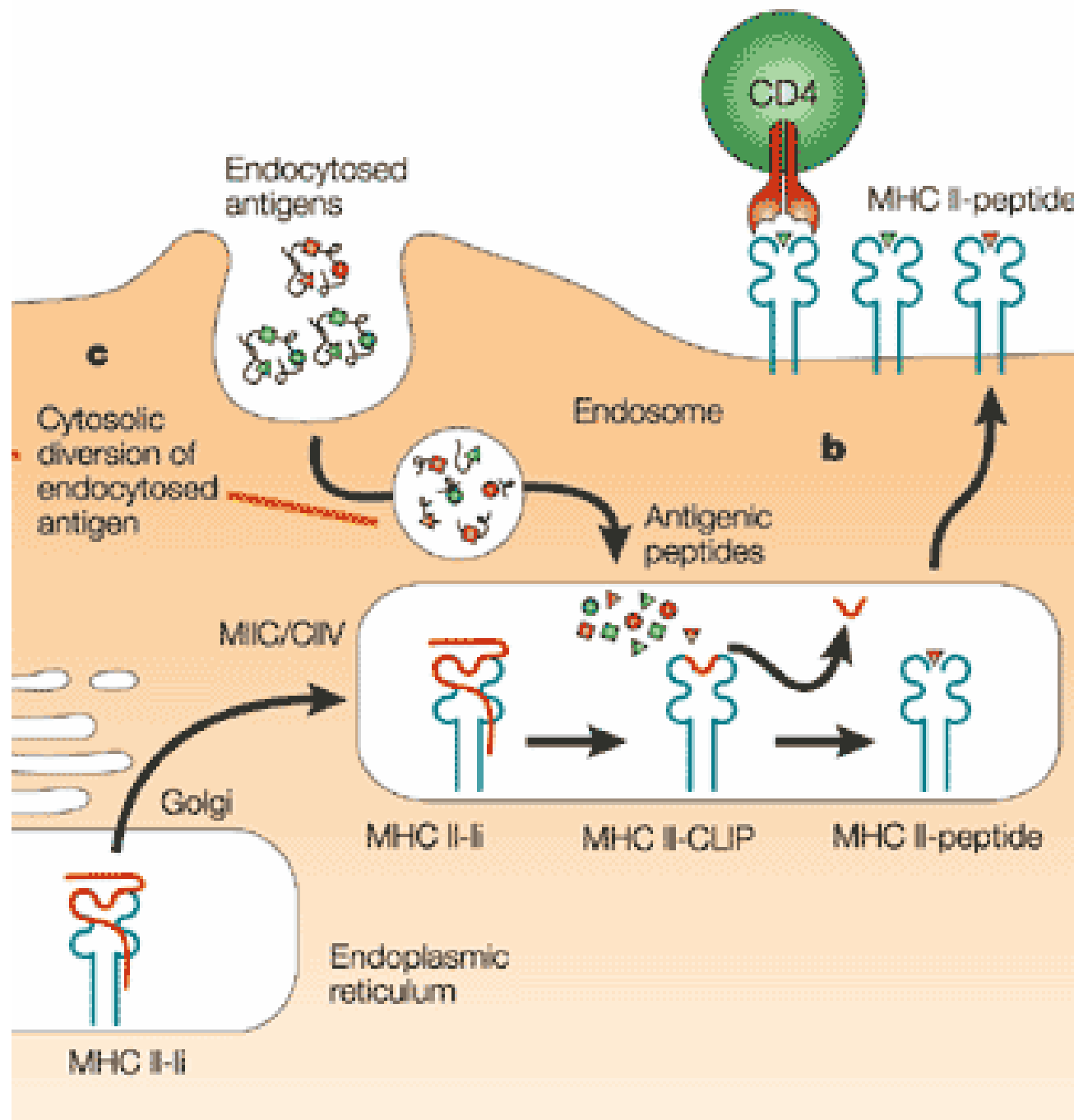


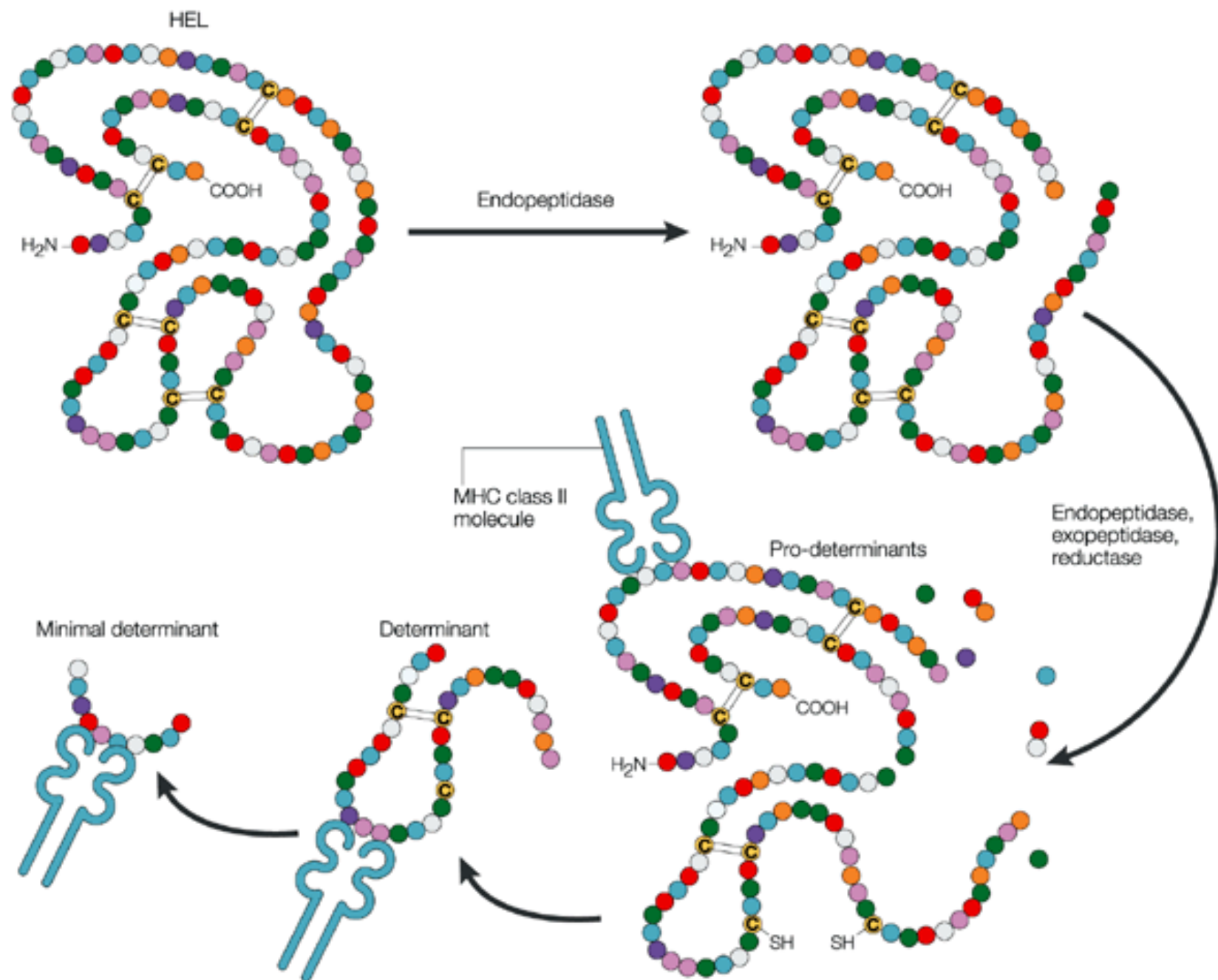




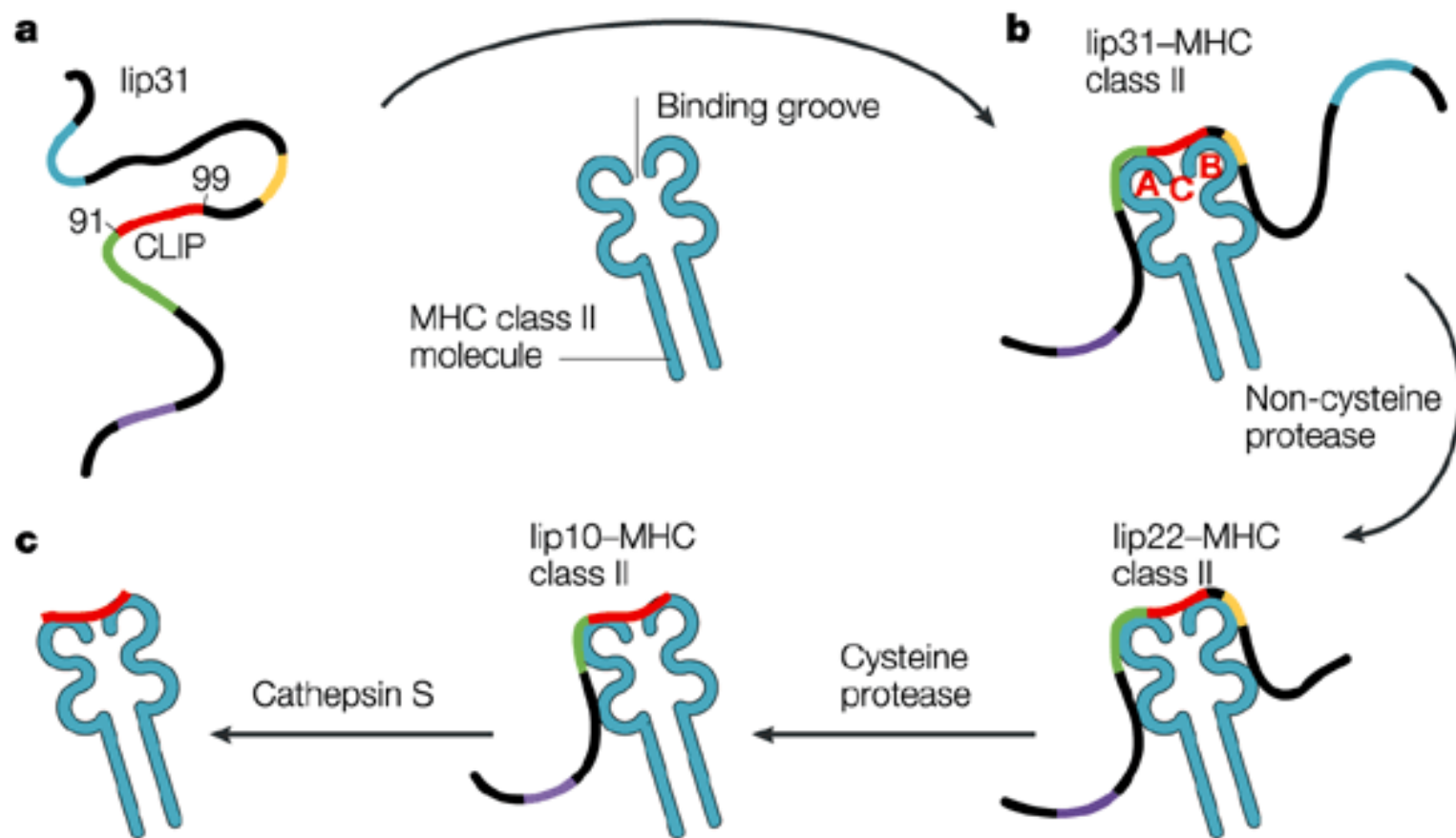
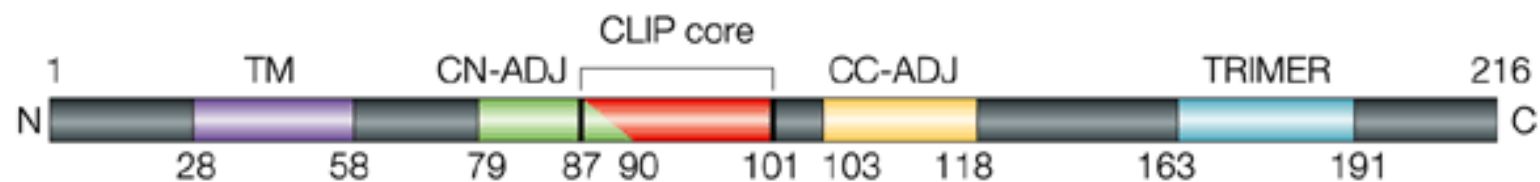








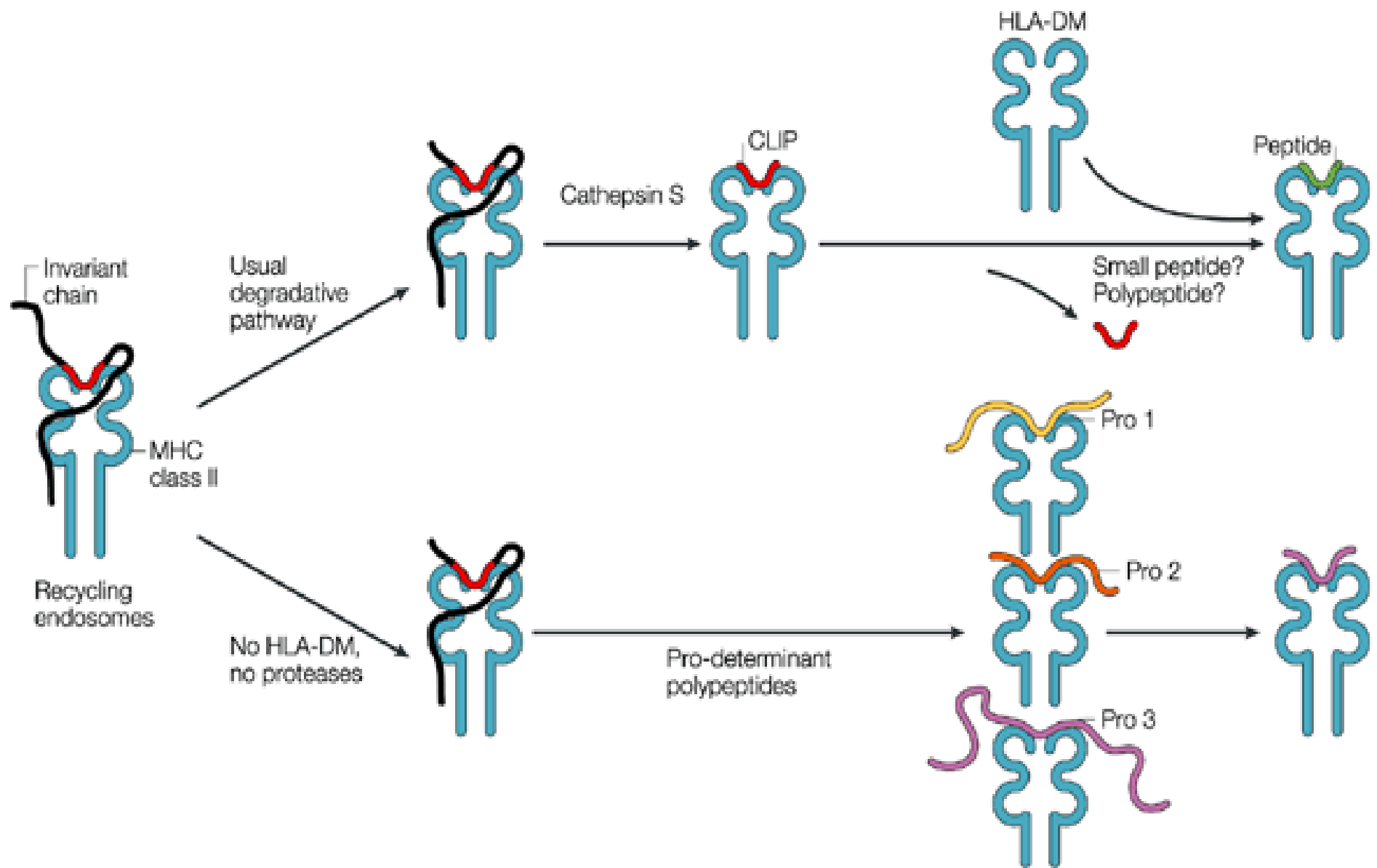




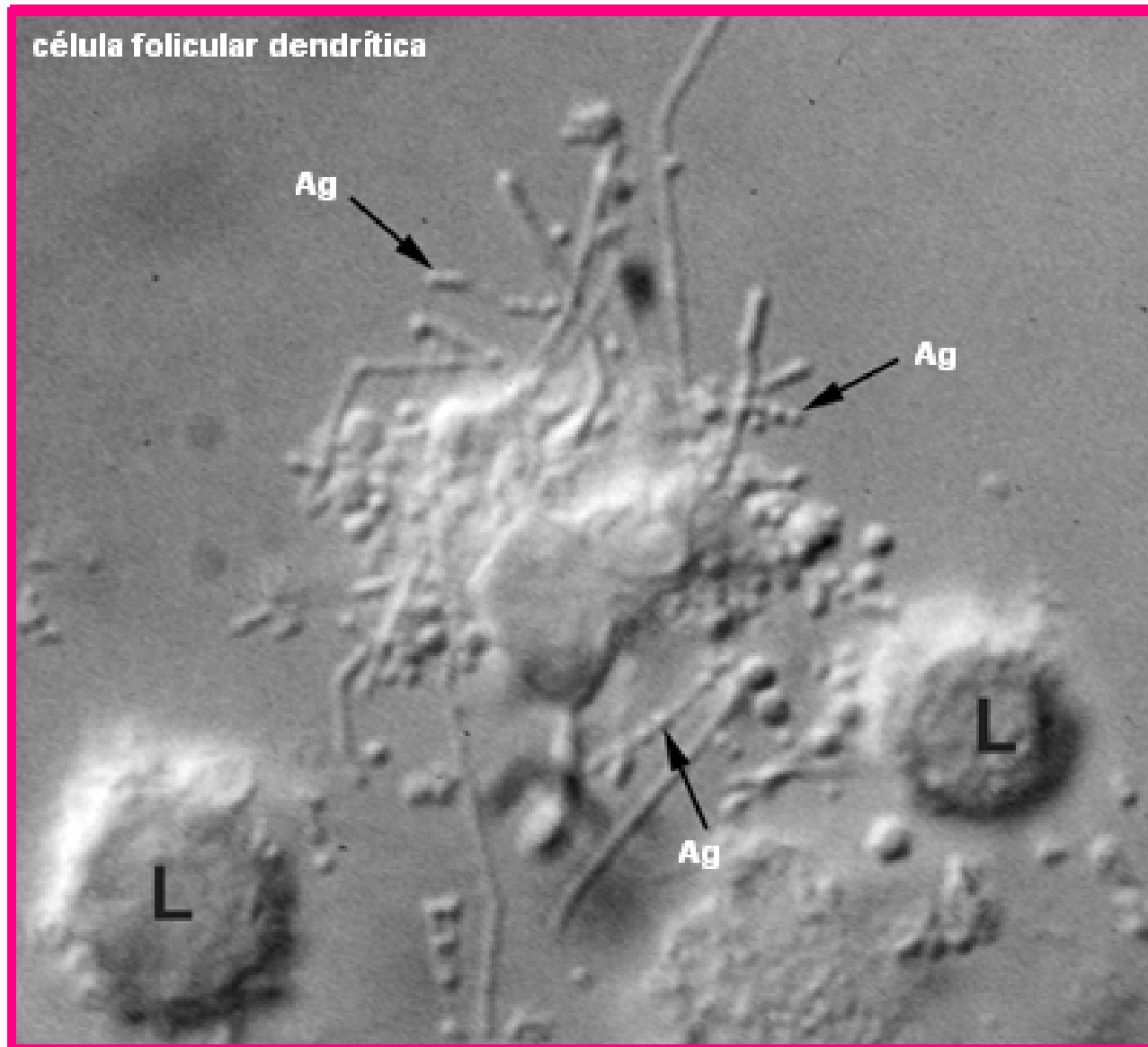
**A B** Non-CLIP sites of interaction between li and MHC

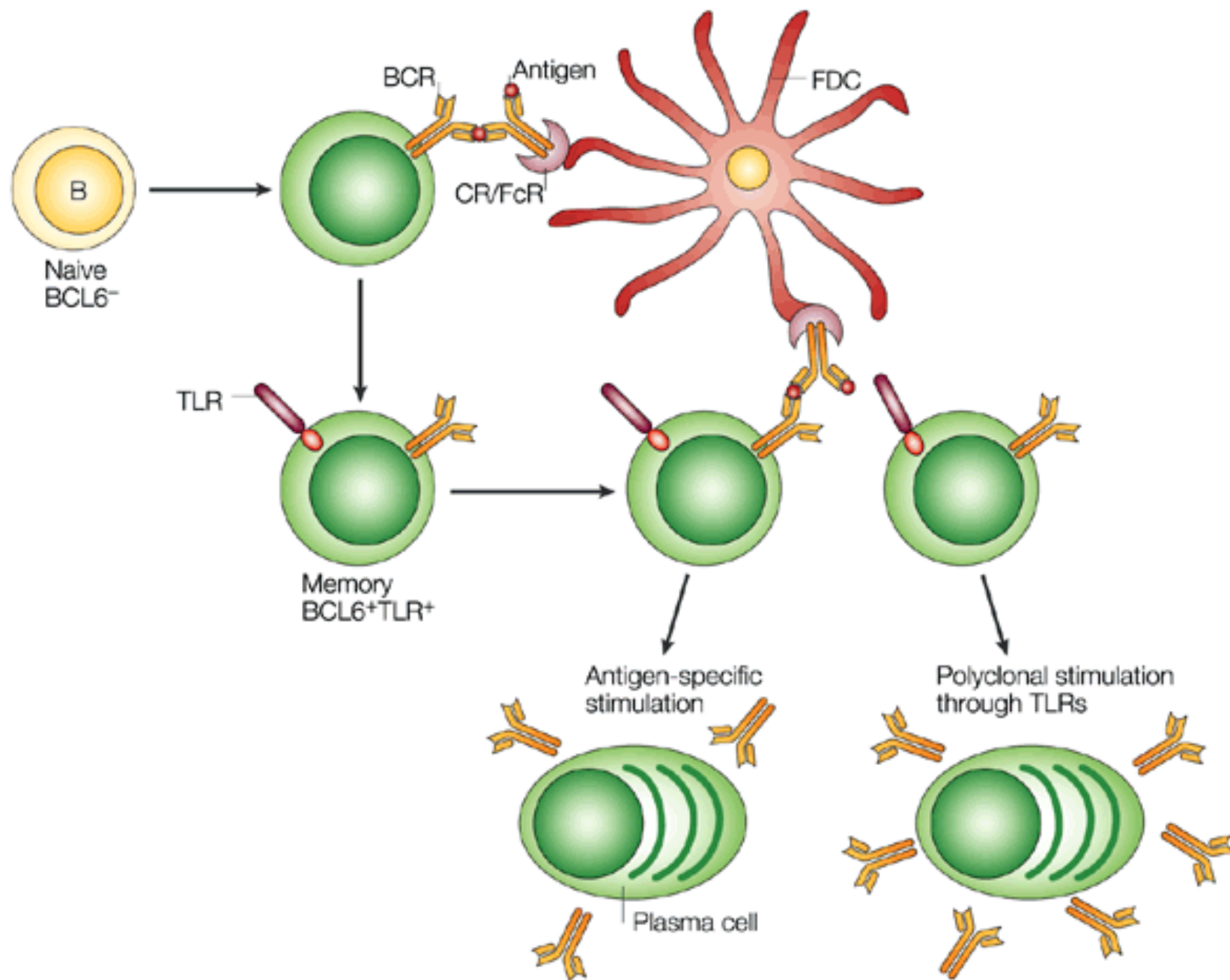
**C** Interaction of peptide-binding groove and li

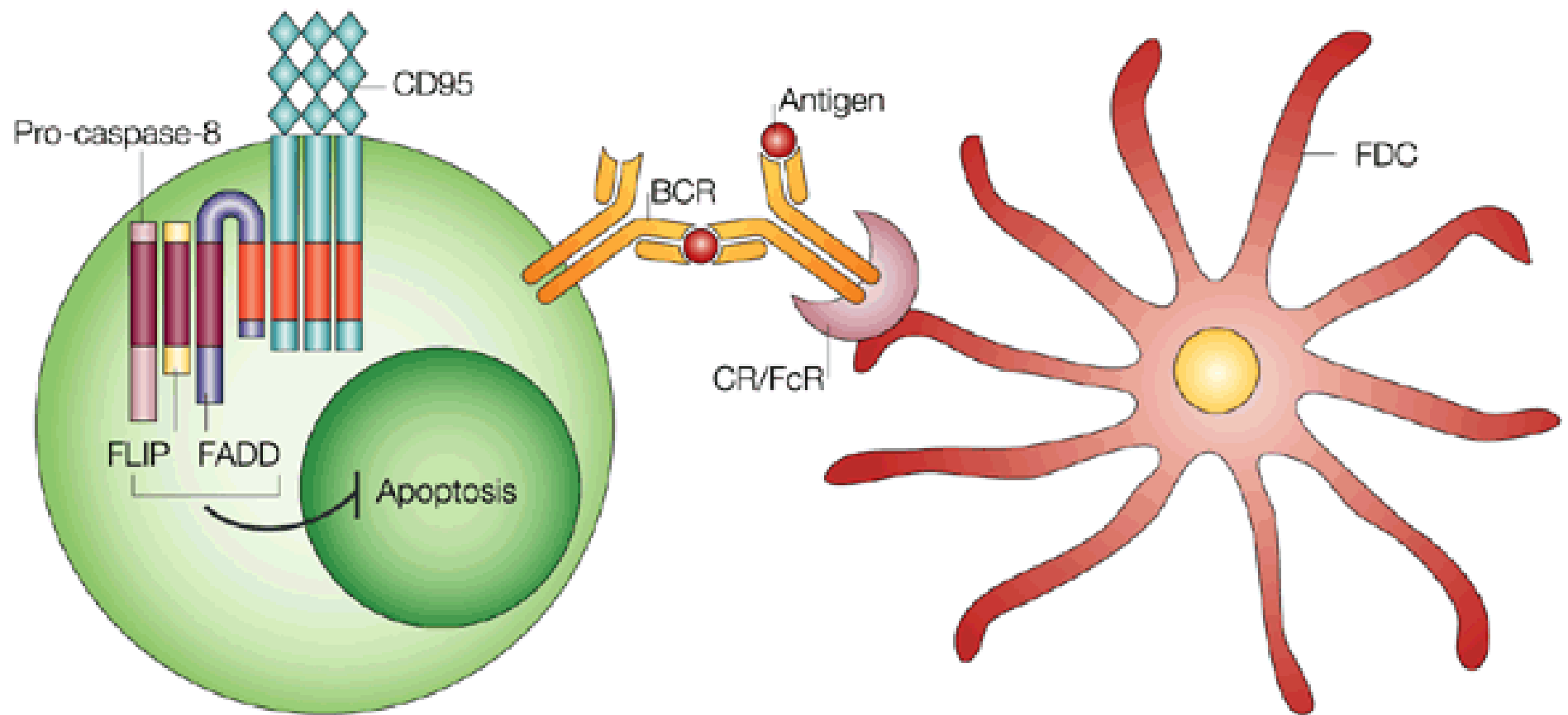




# Ag. Exogeno: presentación por célula folicular dendrítica







# MOLECULAS CD 1 ( MHC CLASE Id )

MHC-LIKE NON MHC

CADENA ALFA Y BETA-2-m COMO Ia y Ib

CROMOSOMA 1(HUMANO) Y 3 (RATON)

NO POLIMORFICAS COMO CLASE Ib

4 ISOTIPOS : HUMANO :TIPO I : a, b y c ; TIPO II : d .

RATON : CD1d 1 y CD1d 2

TRAFICO ENDOSOMAL COMO CLASE II

CD 1 a, b y c PRESENTAN GLICOLIPIDOS Y LIPIDOS

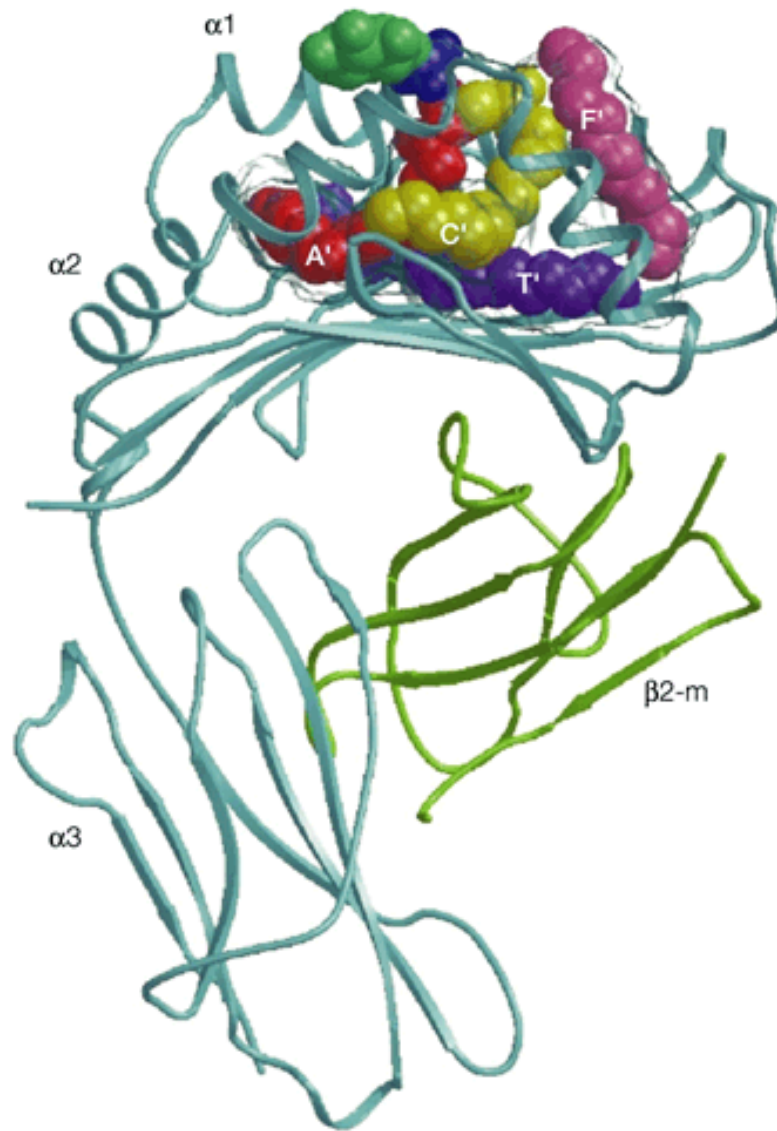
A LINFOCITOS T CD4, T CD8 Y DN (NKT Y LT  $\gamma/\delta$ )

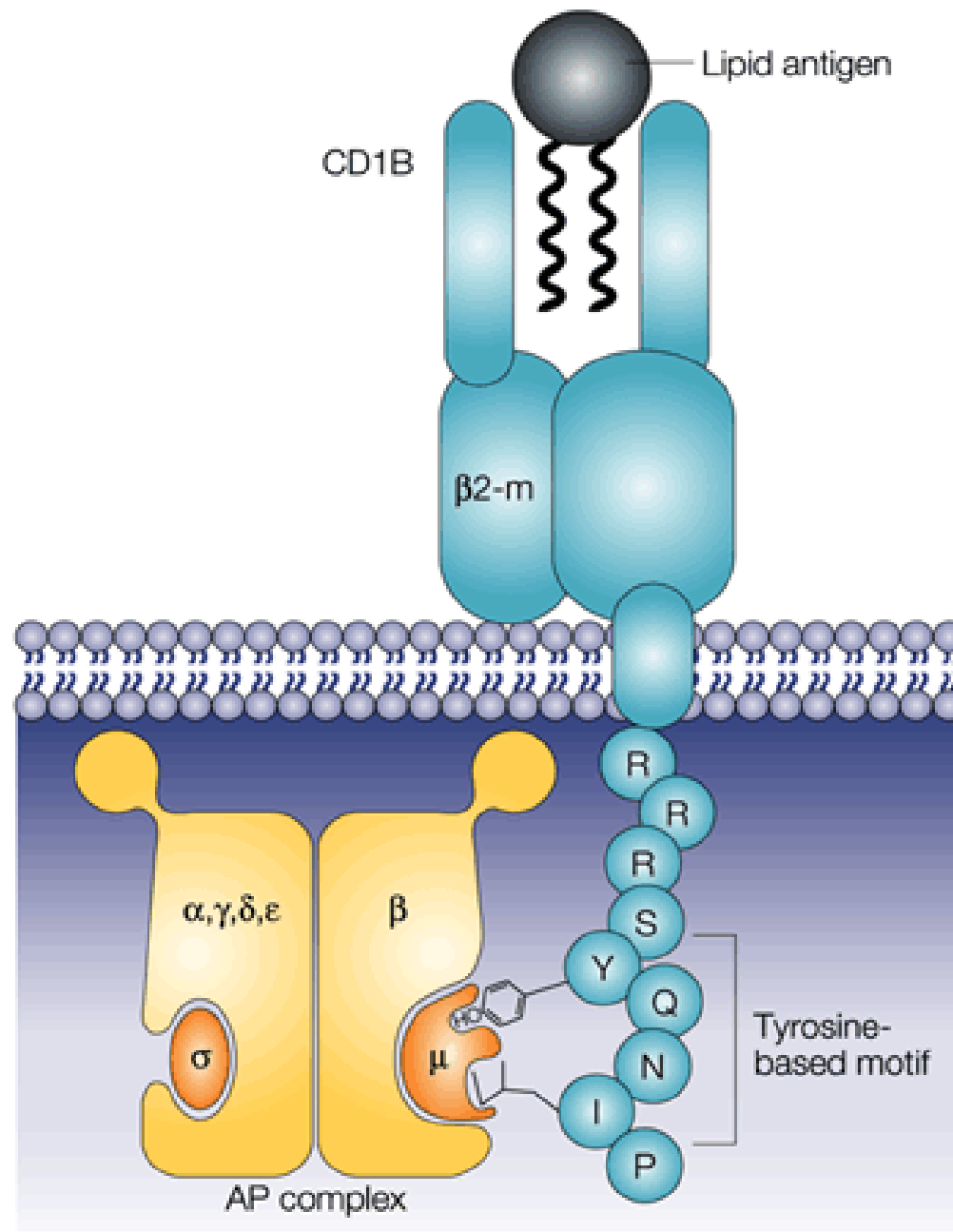
CD1 b y c SE EXPRESAN EN CPA PROF. COMO

CLASE II Y CD1a CELULAS DE LANGERHANS

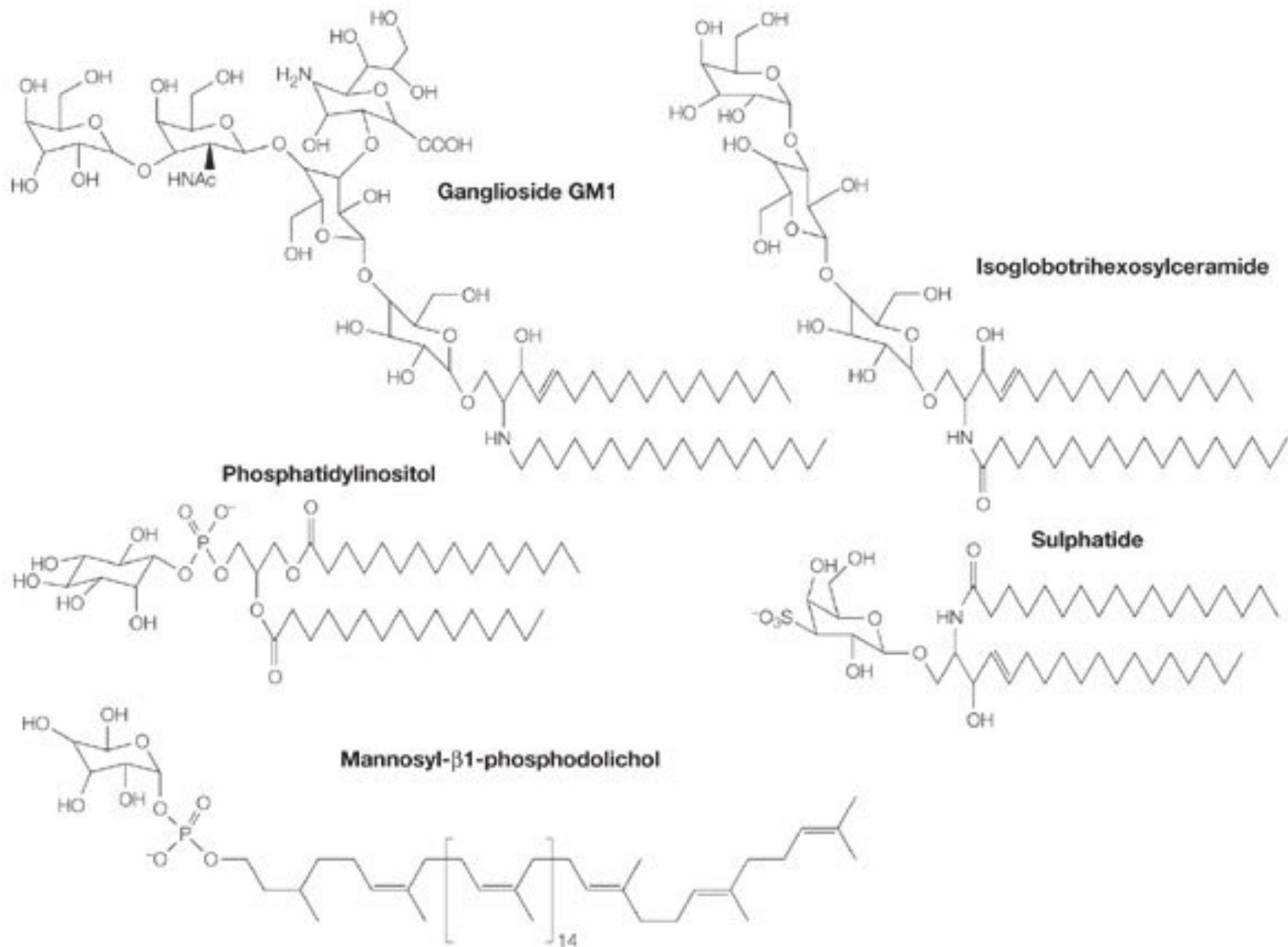
CD1 d PRESENTA A NKT

# Presentacion en CD1B

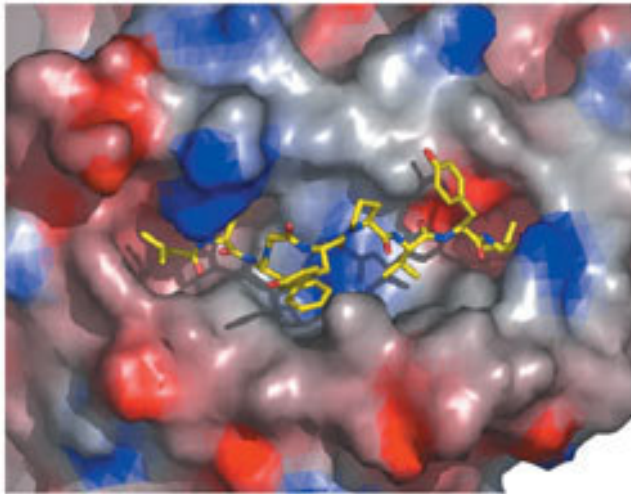




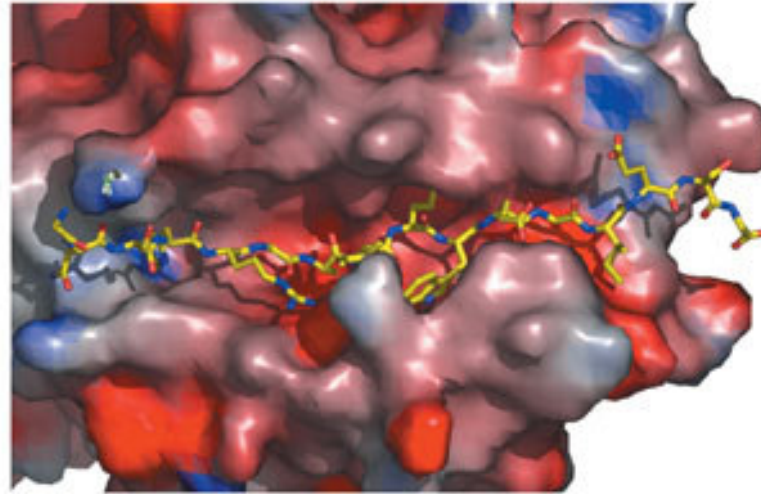




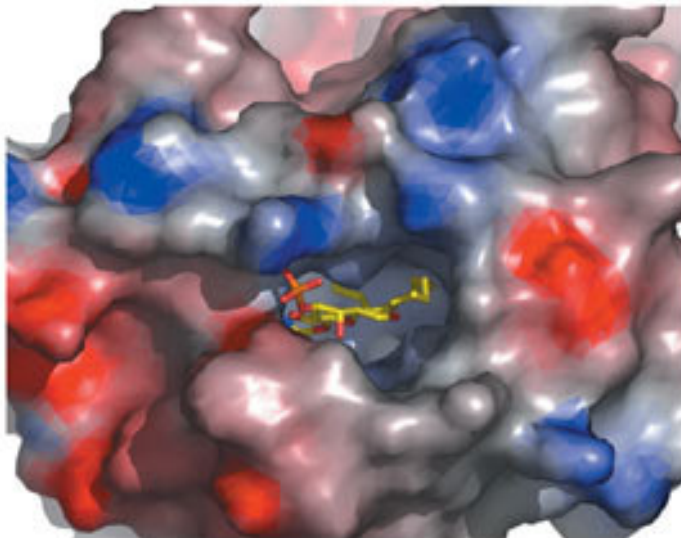
CD1



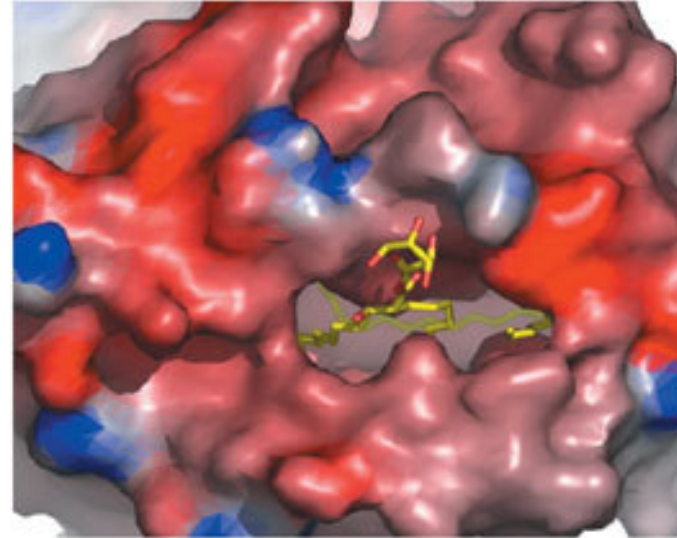
Tax9-HLA-A2



Conalbumin peptide-I-A<sup>k</sup>



Sulphatide-CD1a



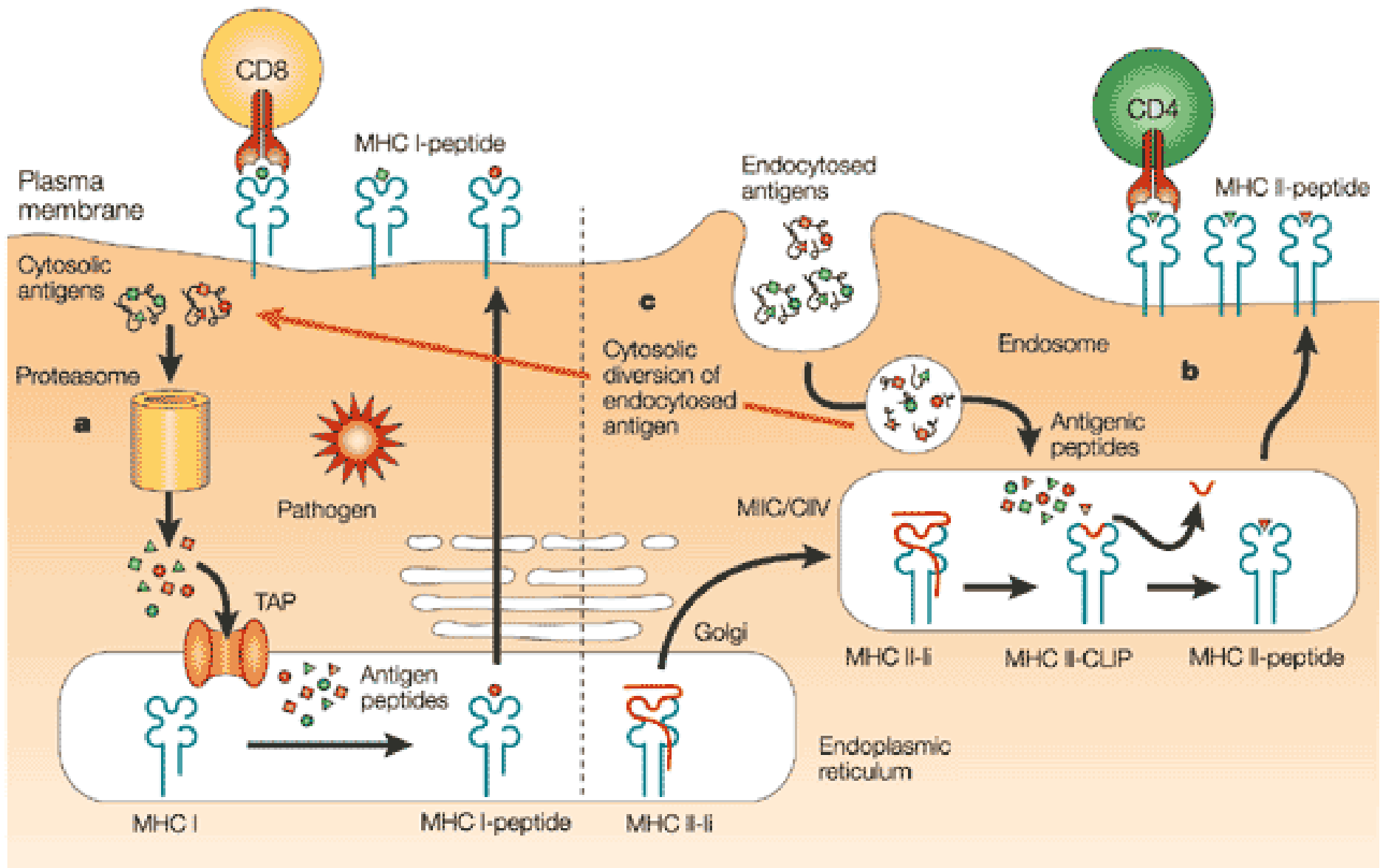
GMM-CD1b

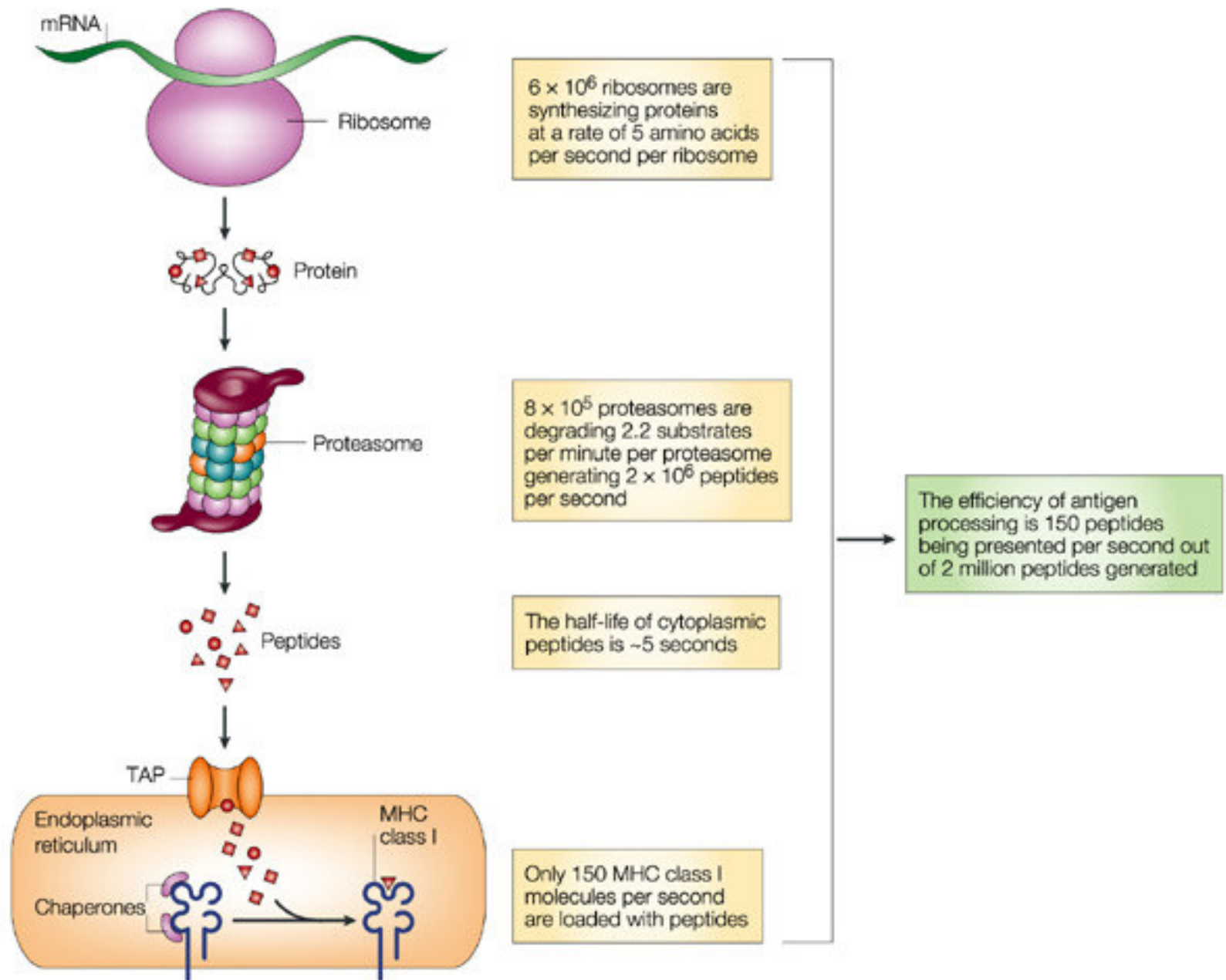
# **ANTIGENOS ENDOGENOS**

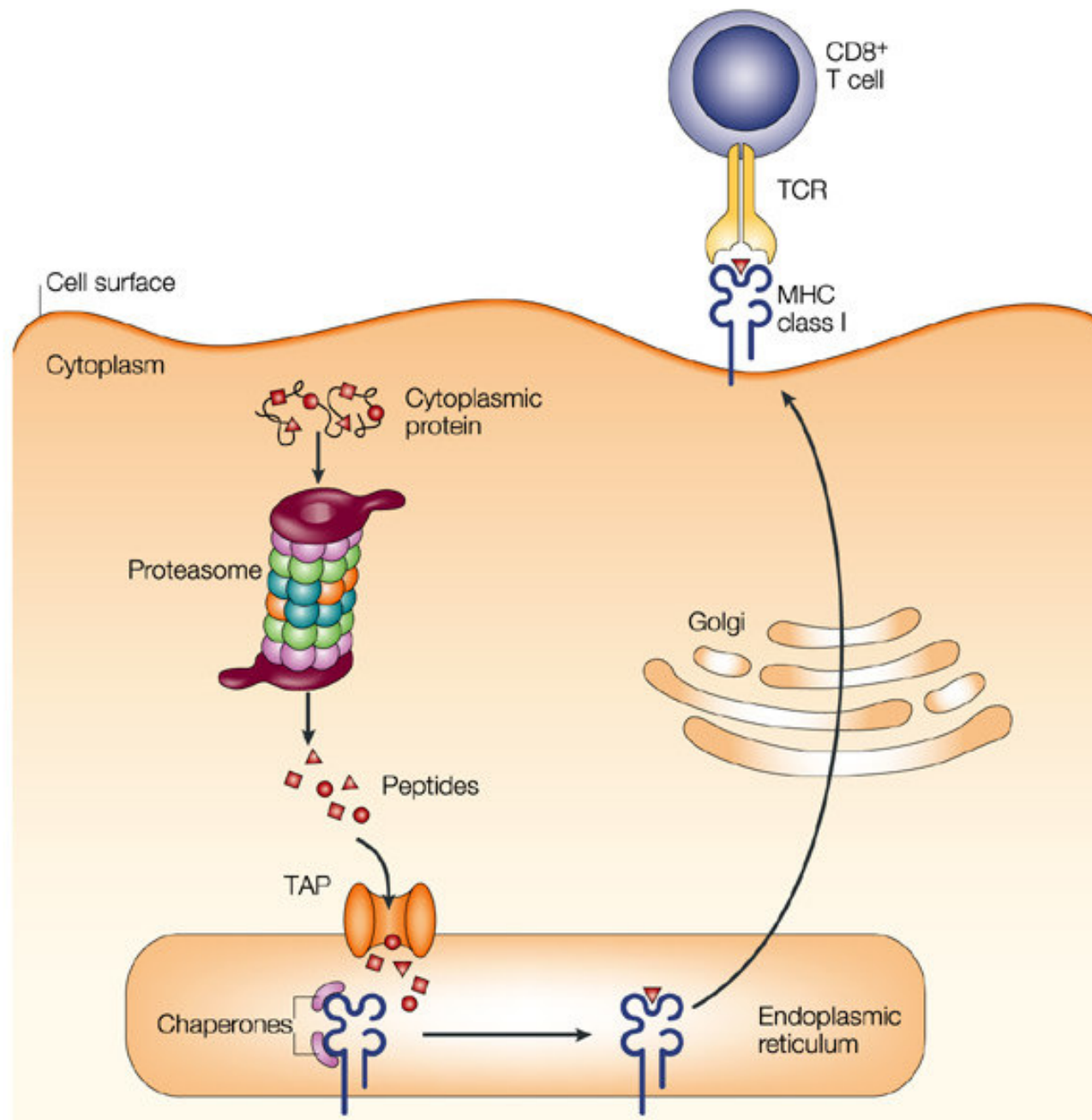
- PROTEINAS RESIDENTES Y PROCESADAS EN EL CITOSOL
- PROTEINAS VIRALES SINTETIZADAS EN LOS POLIRIBOSOMAS
- DERIVADOS DE PATOGENOS INTRACELULARES EN EL CITOSOL

- SON PROCESADOS EN EL CITOSOL Y GENERAN PEPTIDOS QUE INGRESAN AL RETICULO ENDOPLASMICO
- ESTOS PEPTIDOS SE ASOCIAN A MOLECULAS MHC CLASE I Y SON PRESENTADOS A LOS LINFOCITOS T CD8 CITOTOXICOS

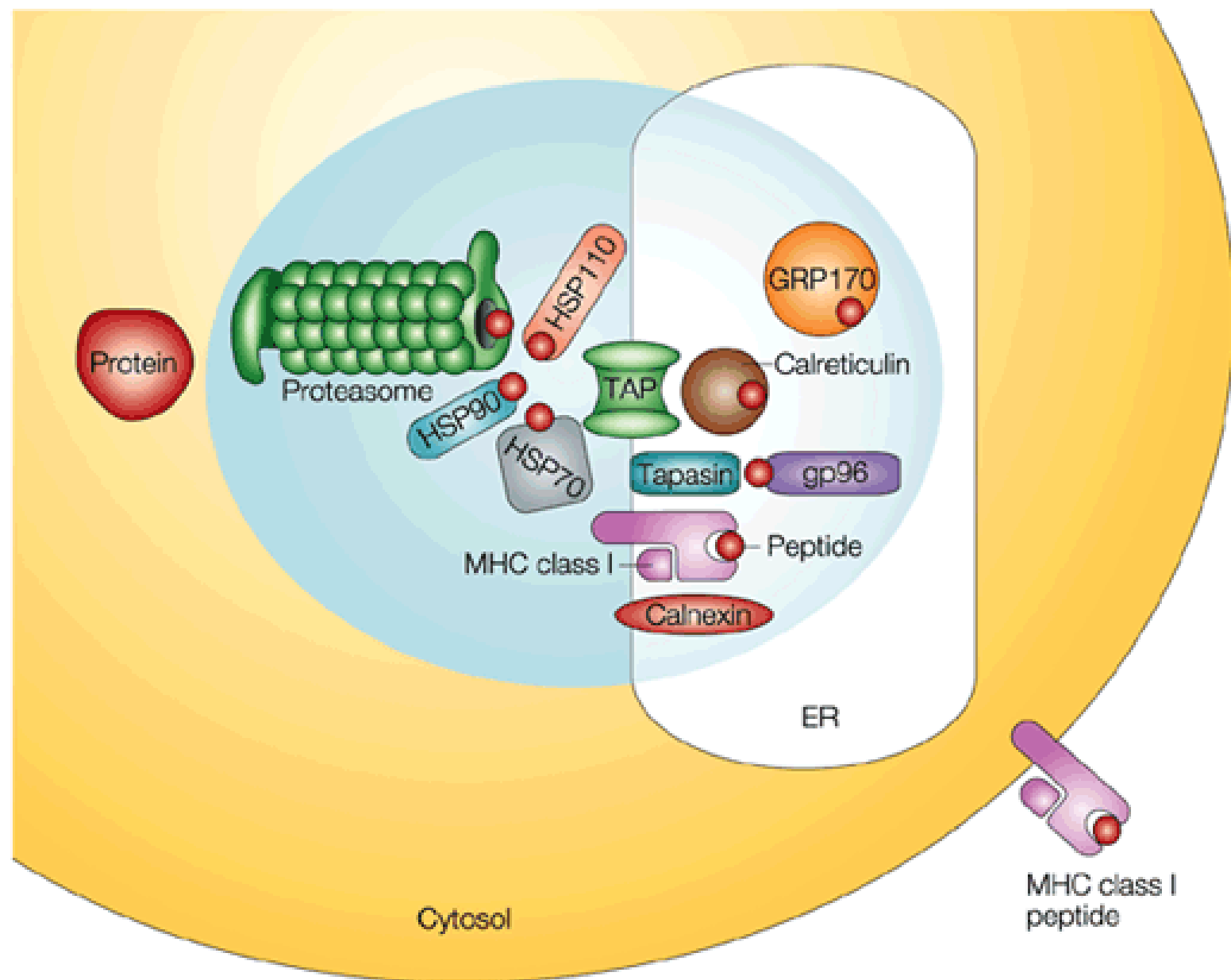
# Antígenos endógenos



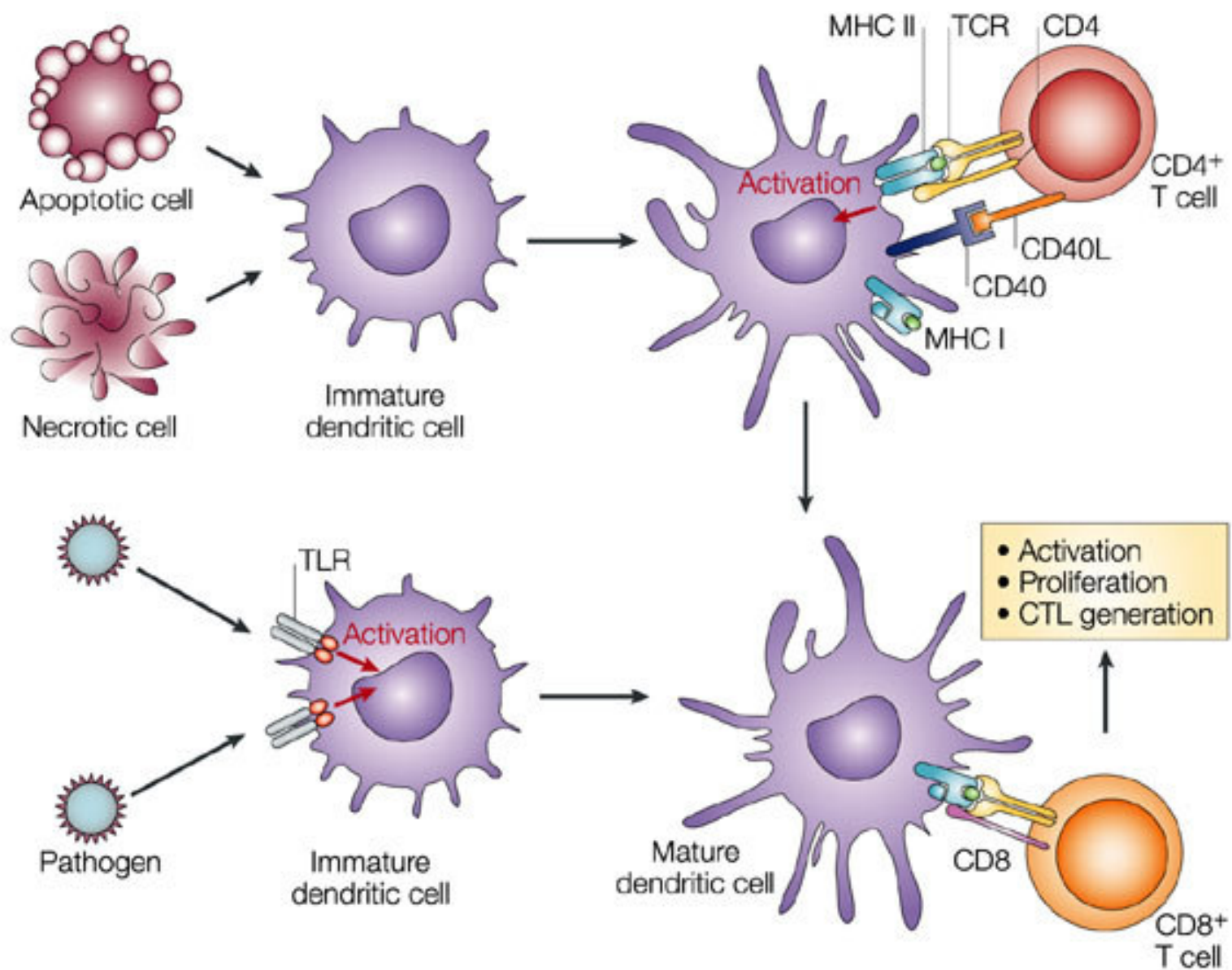


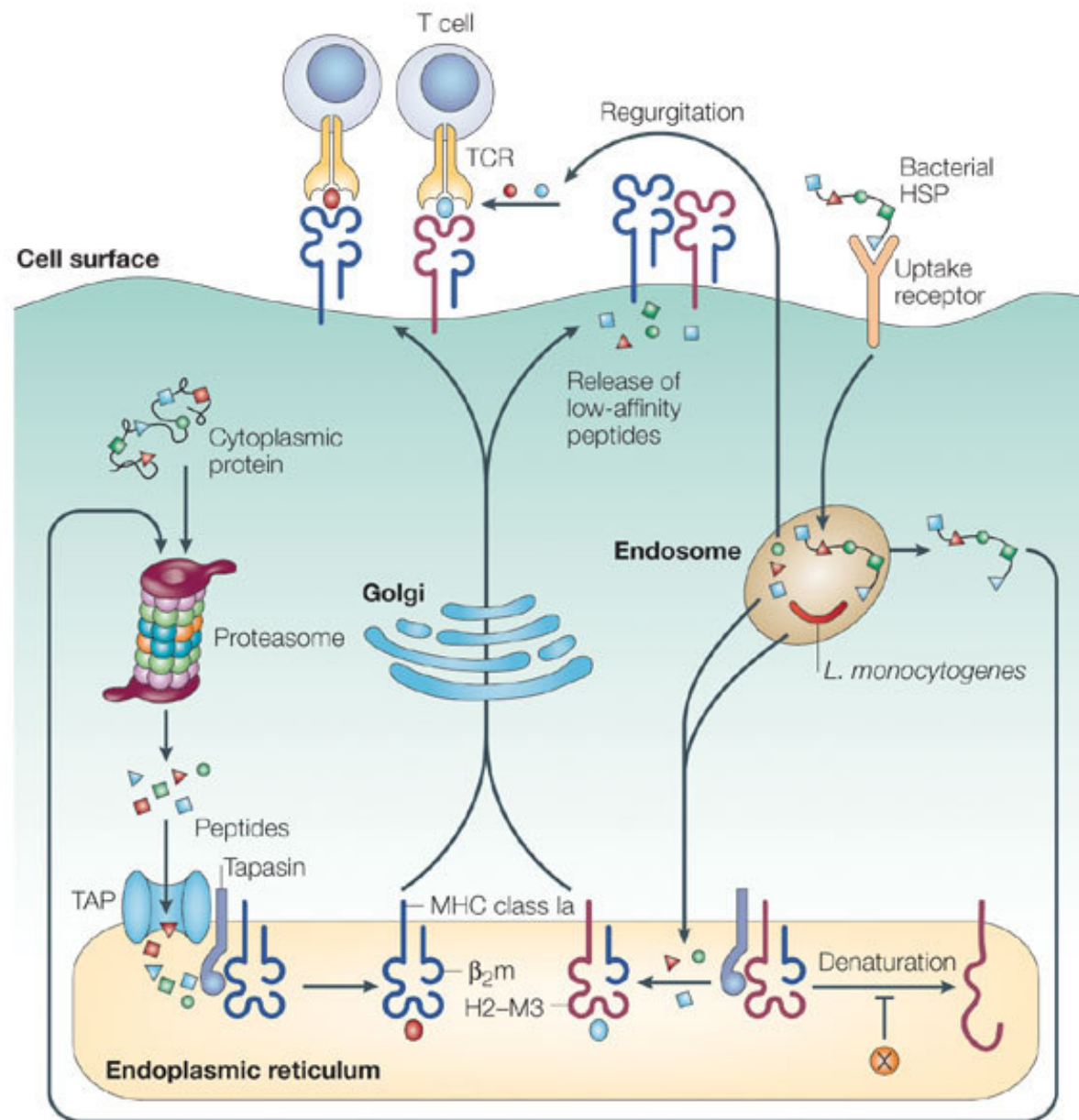


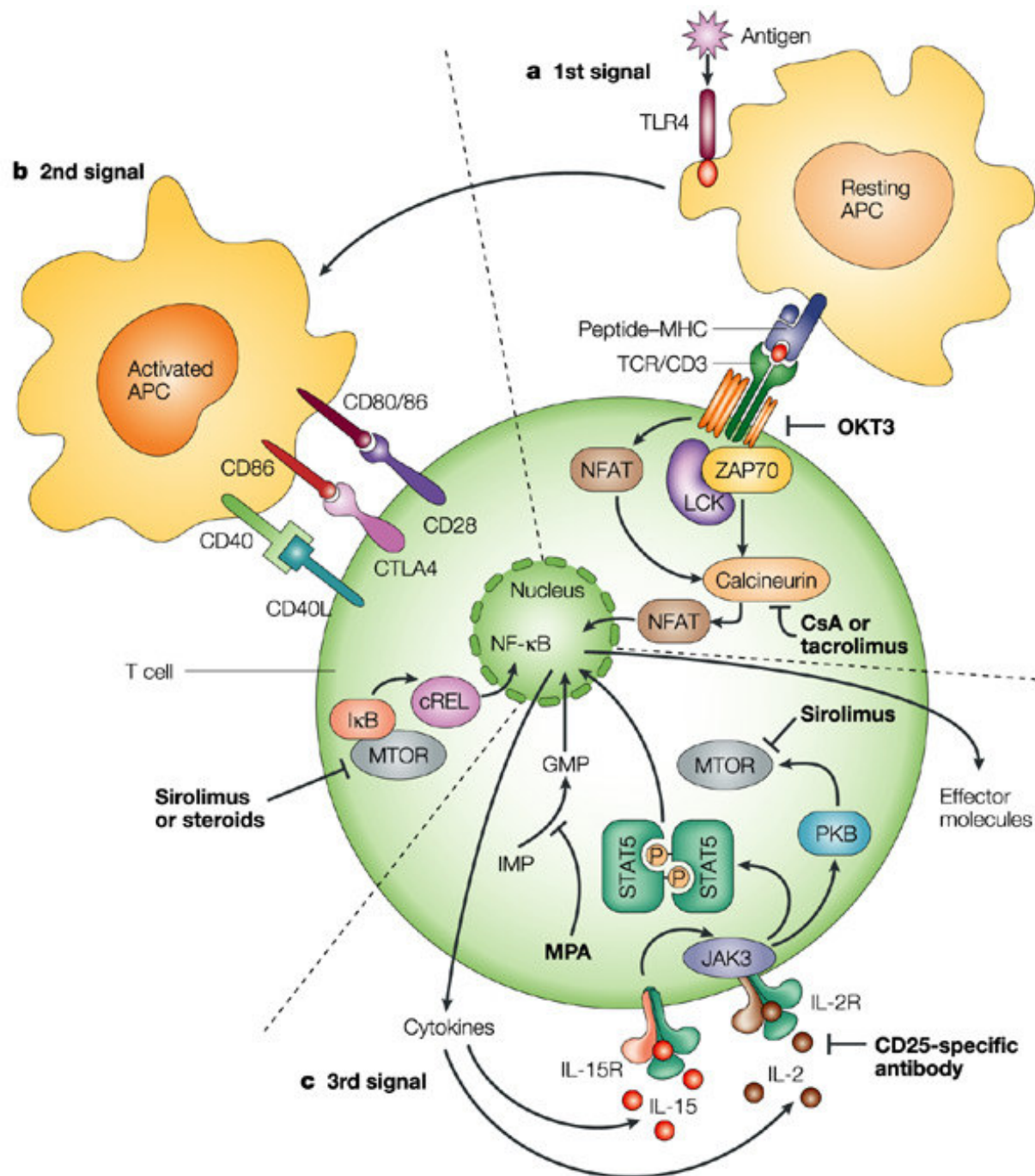


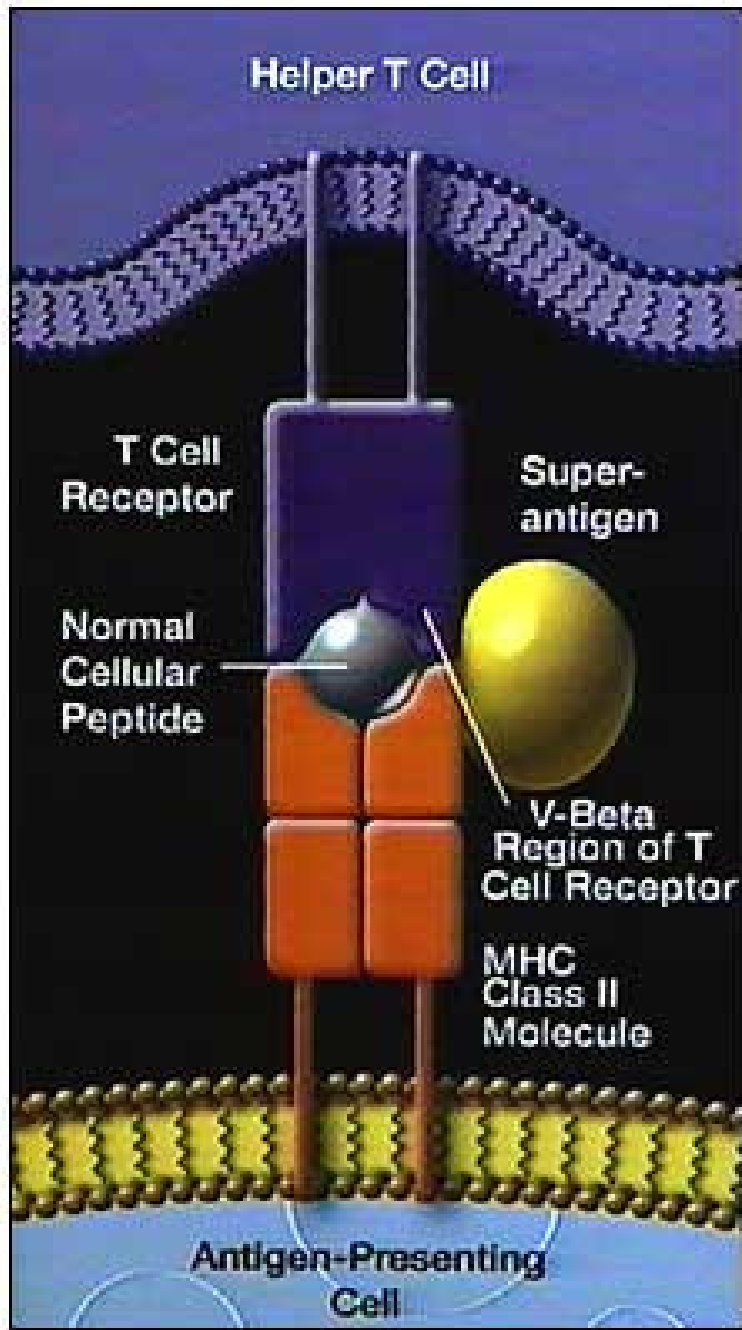












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# Reconociendo un Antígeno de multiples maneras

