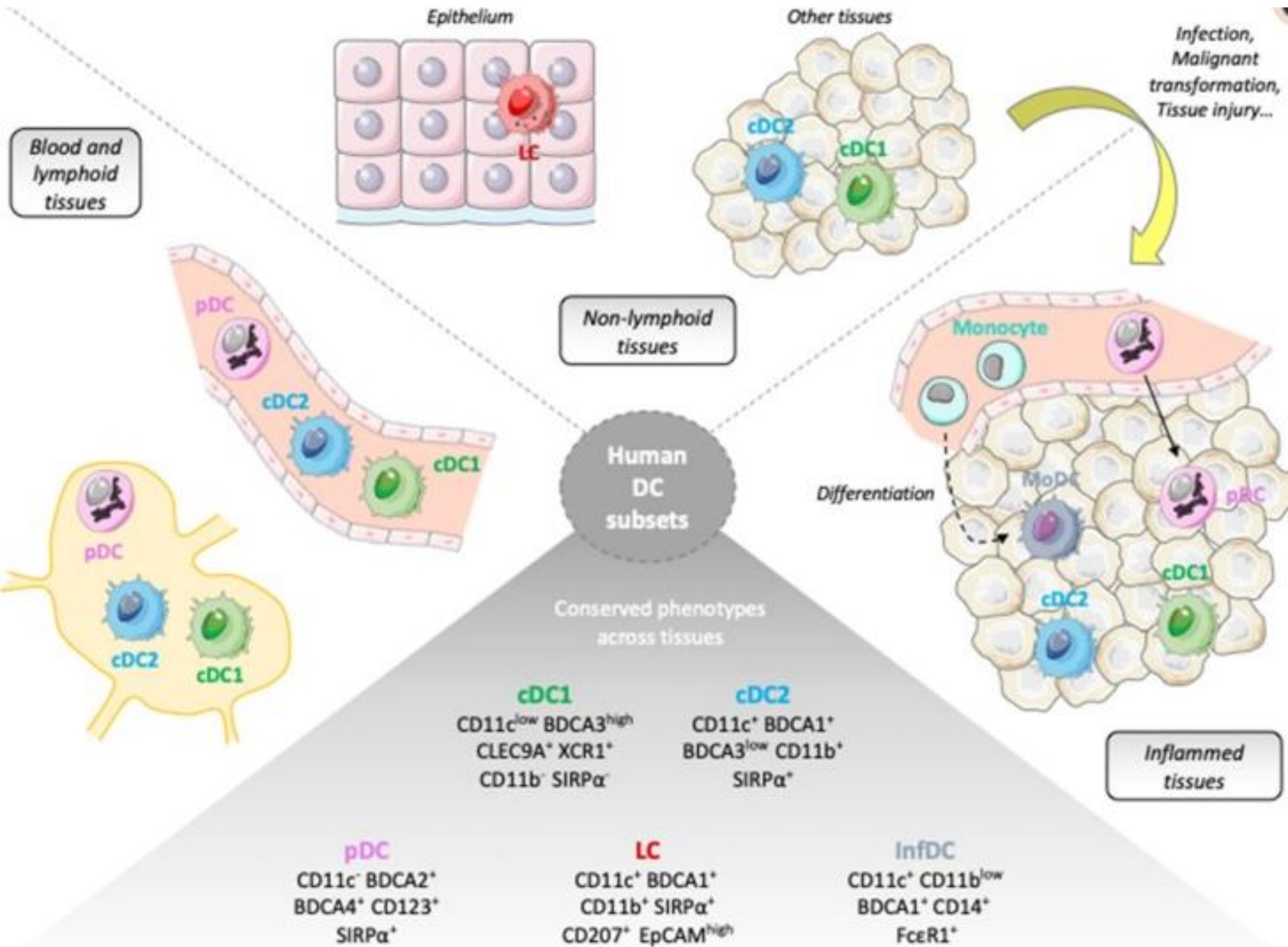


Topic A

Antigen Presentation

Breakout Session I

Moderator: Olivera (Olja) Finn, PhD
University of Pittsburgh School of Medicine
University of Pittsburgh Cancer Institute



What other cells present antigens?

What other cells present antigens?

- Macrophages
- B cells
- Epithelial cells
- Endothelial cells
- Tumor cells
- T cells

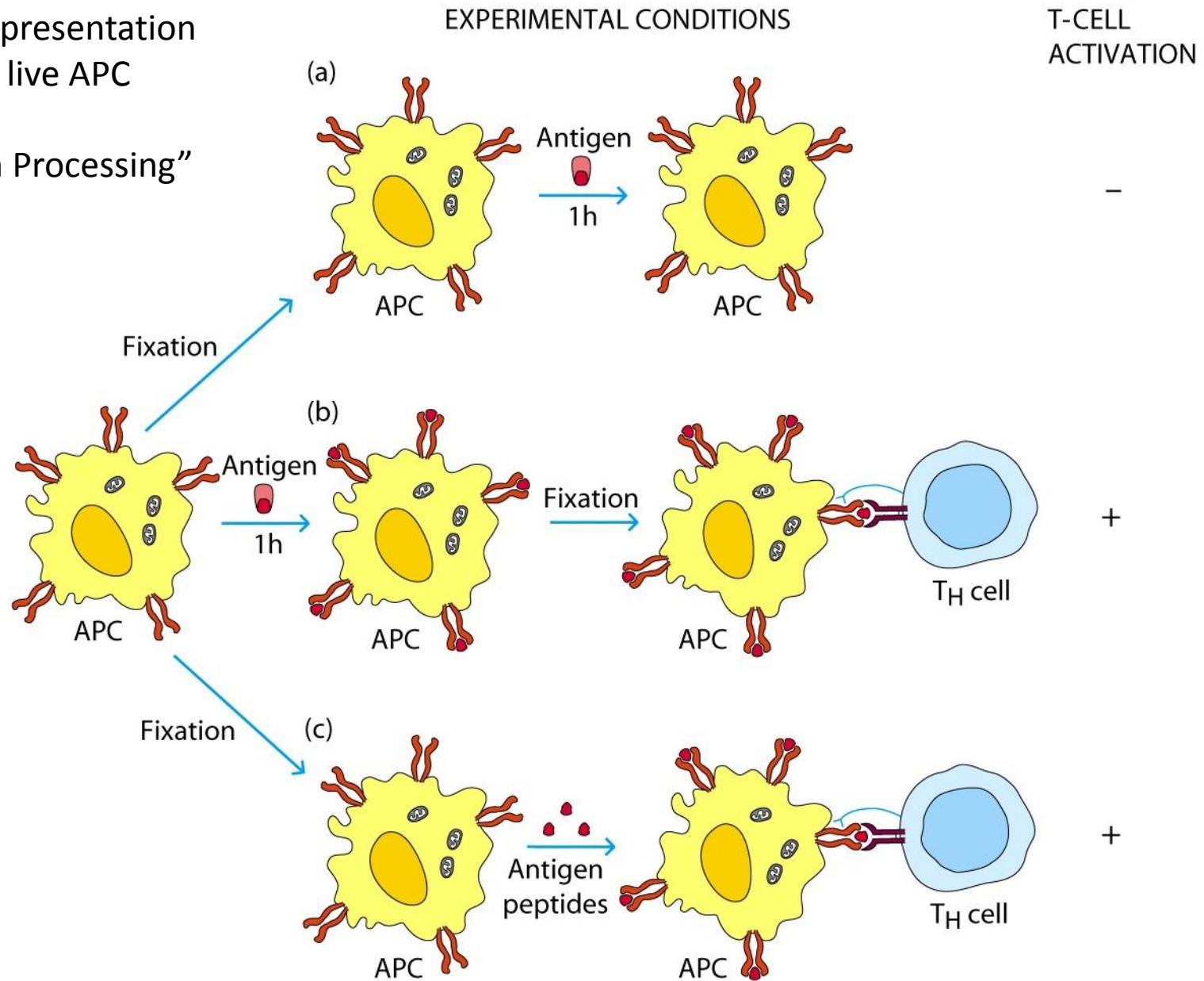
What other cells present antigens?

- Macrophages
- B cells
- Epithelial cells
- Tumor cells
- T cells

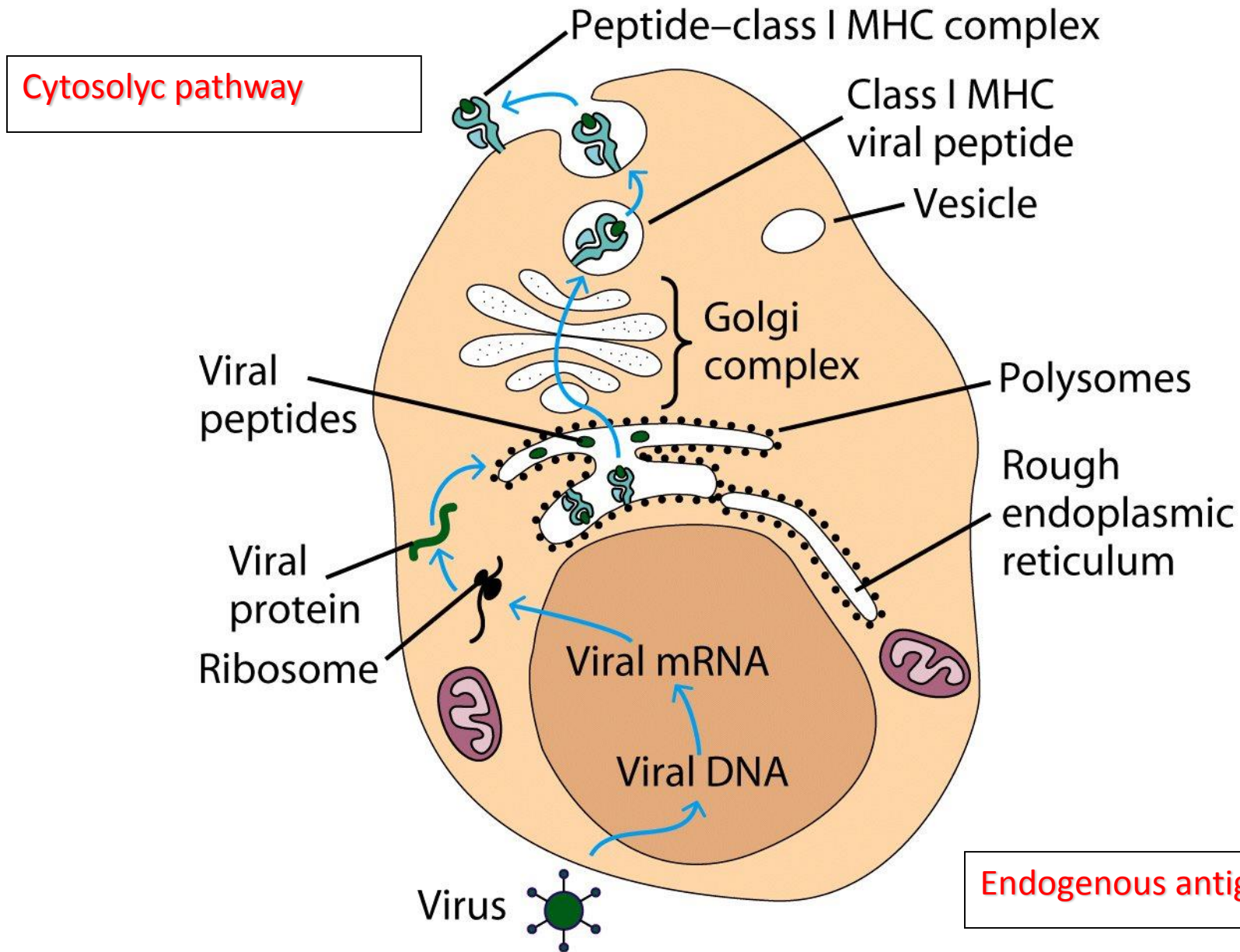


Antigen presentation
requires live APC

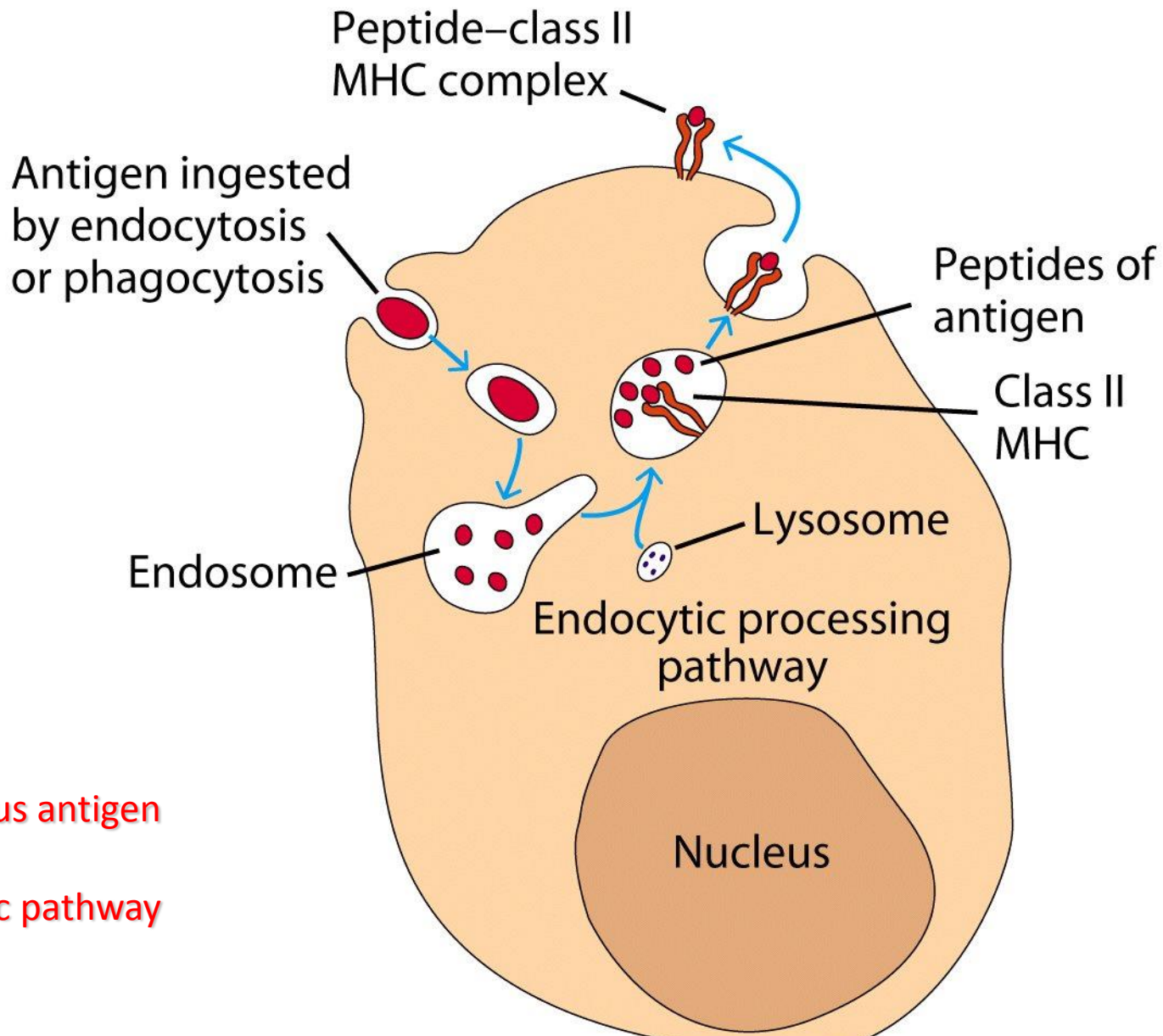
“Antigen Processing”



Primarily for MHC-Class I restricted cytotoxic T cells



Primarily for MHC-Class II restricted helper T cells



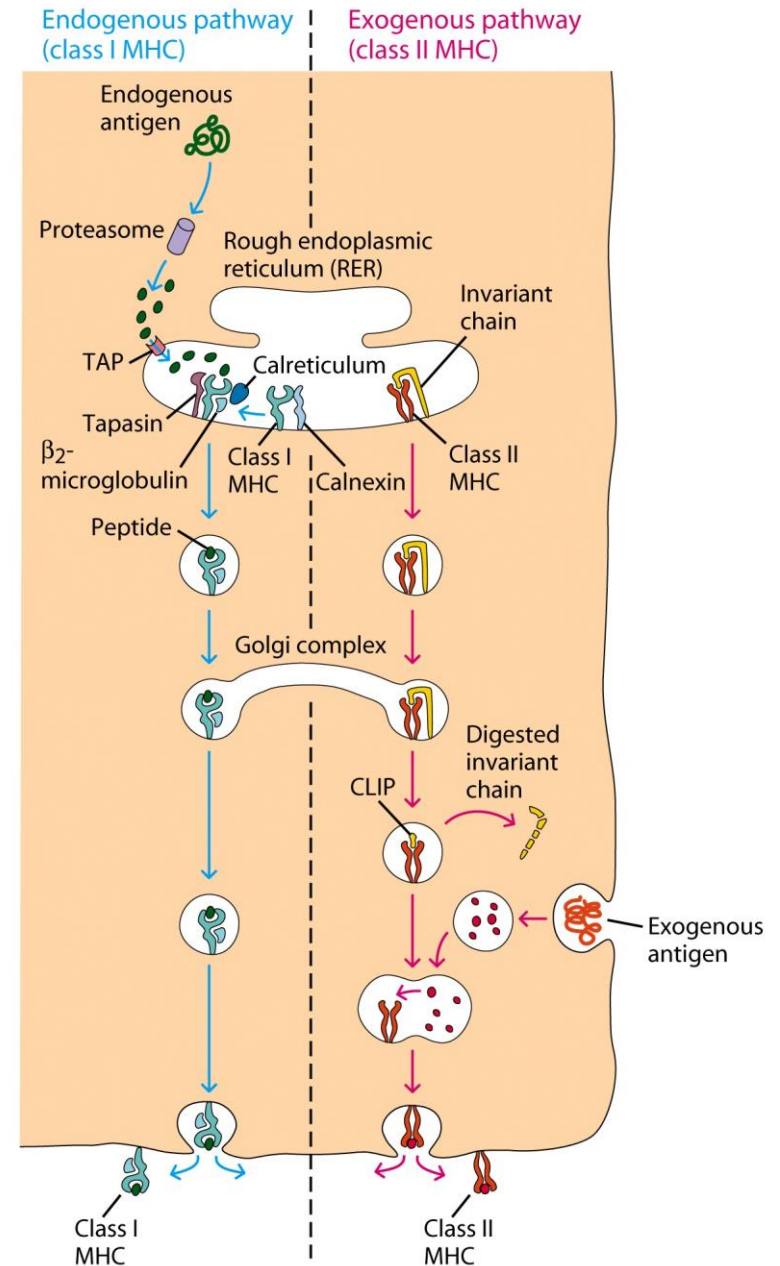
Exogenous antigen

Endocytic pathway

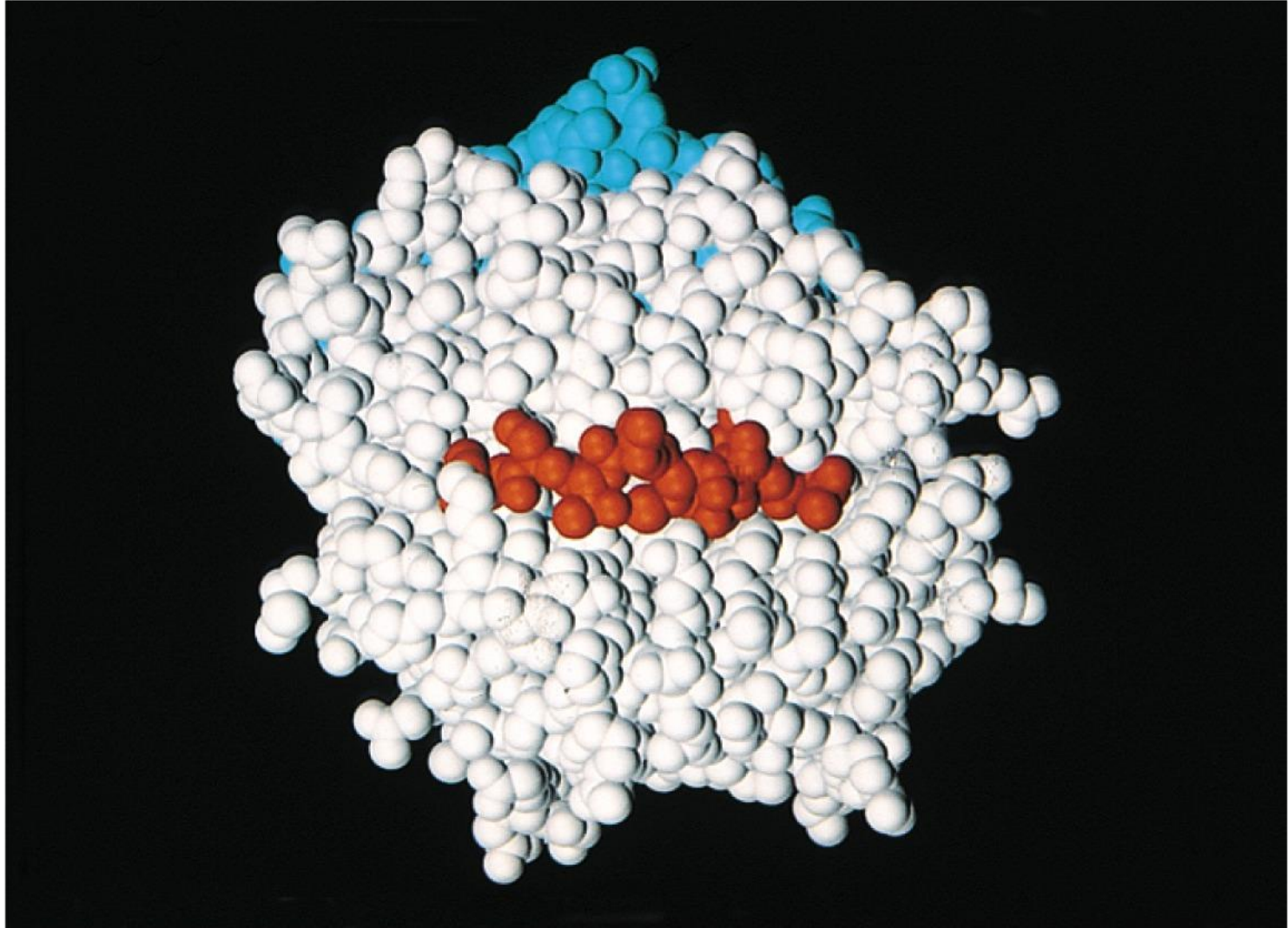
Cytosolic (endogenous) pathway constitutive in all cells

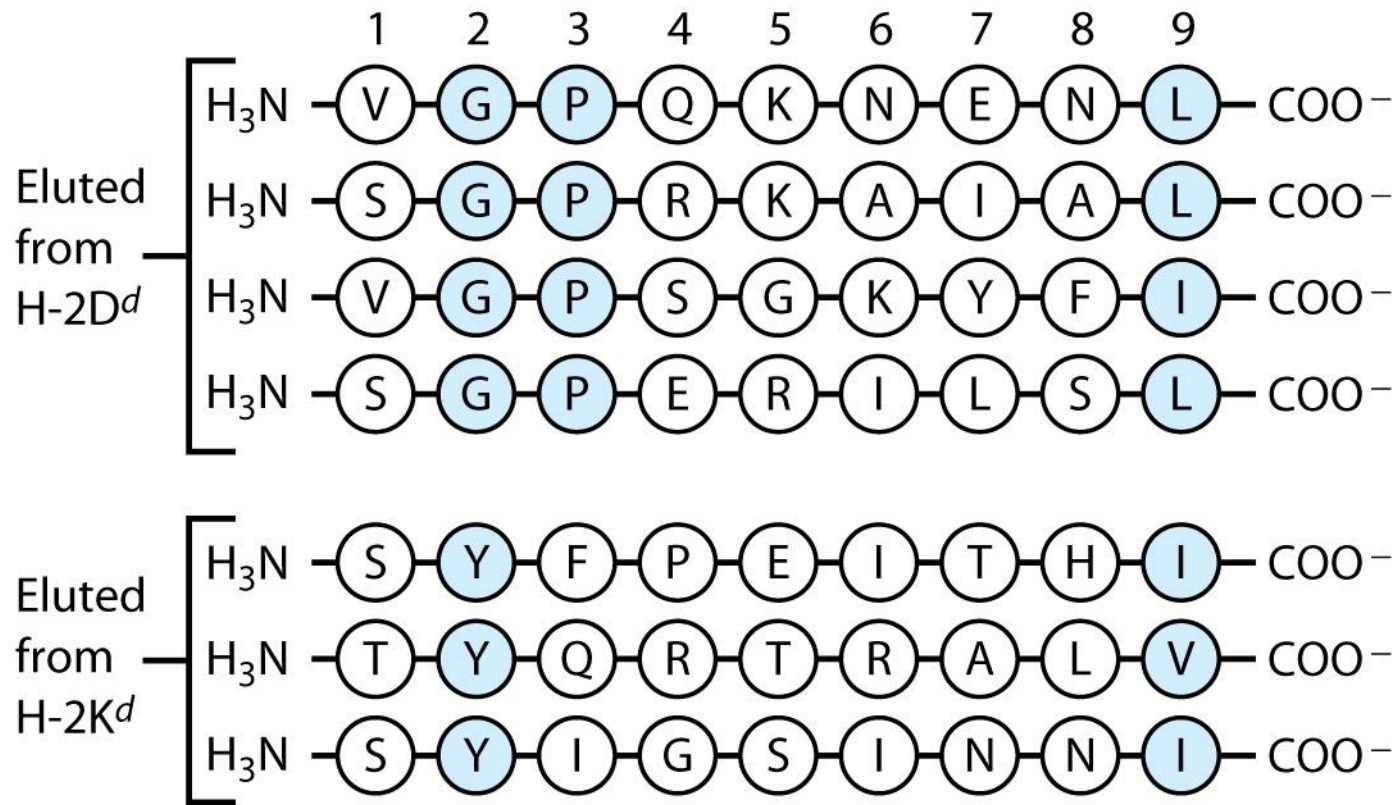
Exogenous pathway in APC

In APC there is cross-over known as “cross-presentation”



(a) **Class I MHC**





A = alanine

E = glutamic acid

F = phenylalanine

G = glycine

H = histidine

I = isoleucine

K = lysine

L = leucine

N = asparagine

P = proline

Q = glutamine

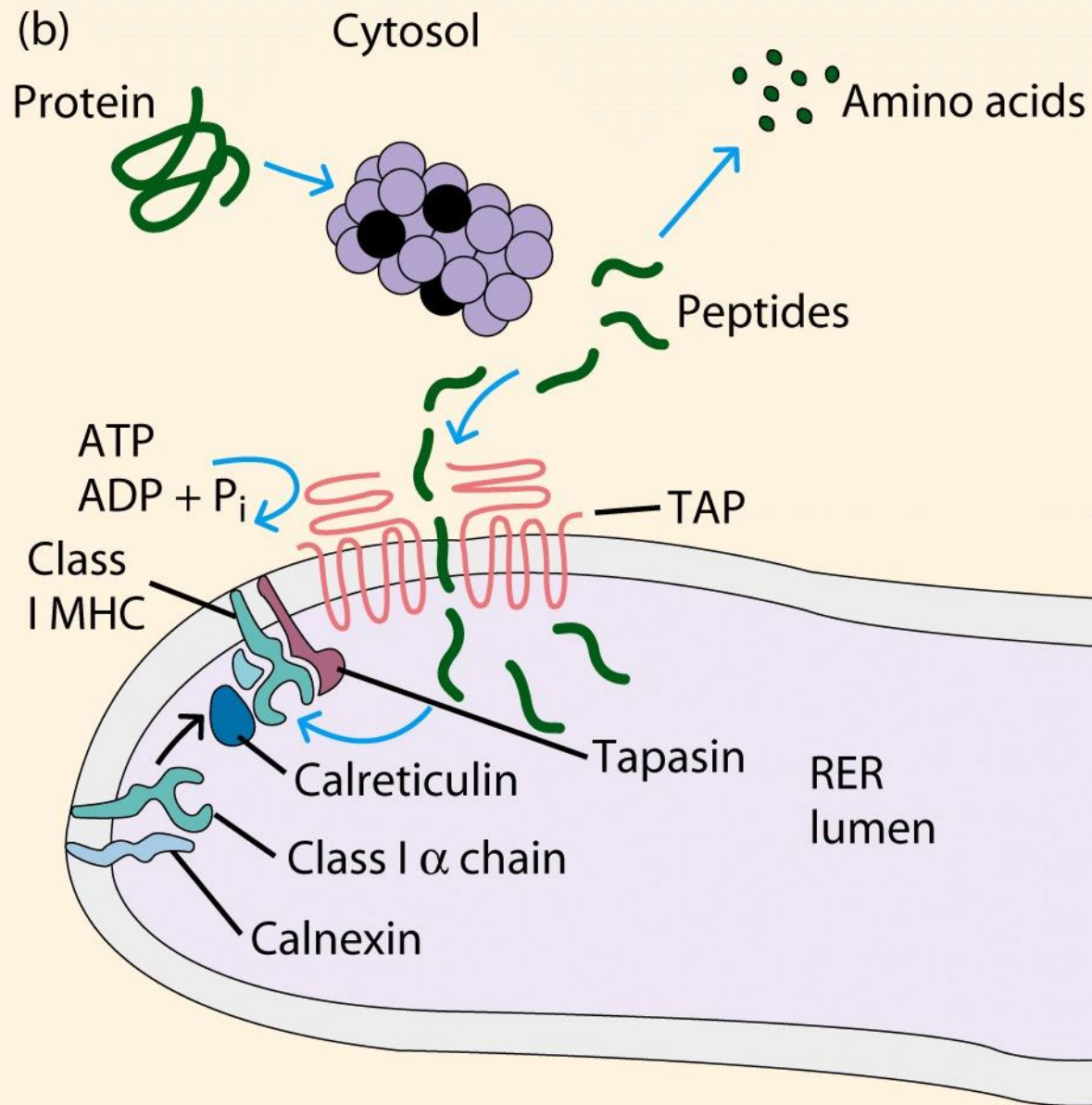
R = arginine

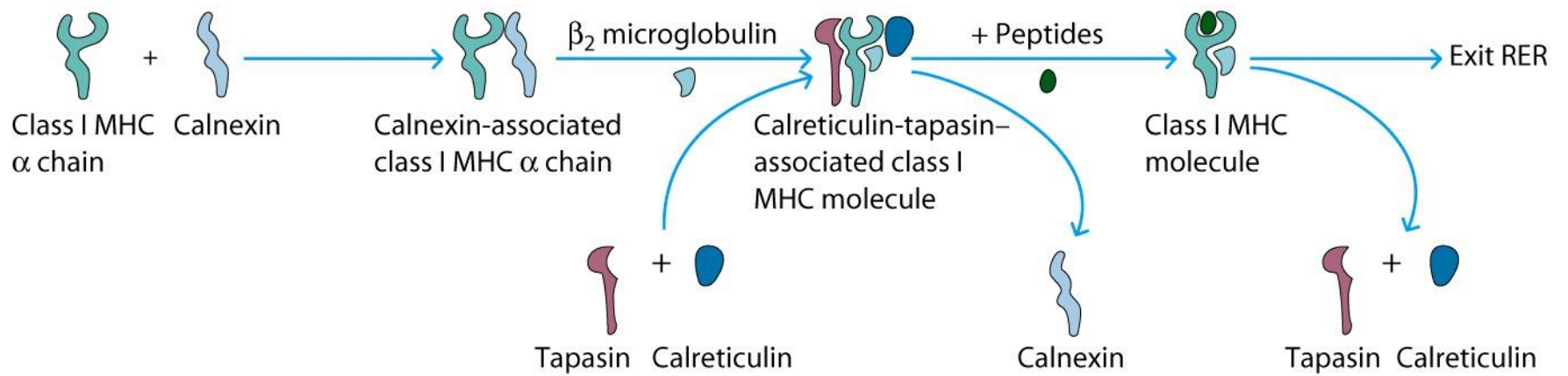
S = serine

T = threonine

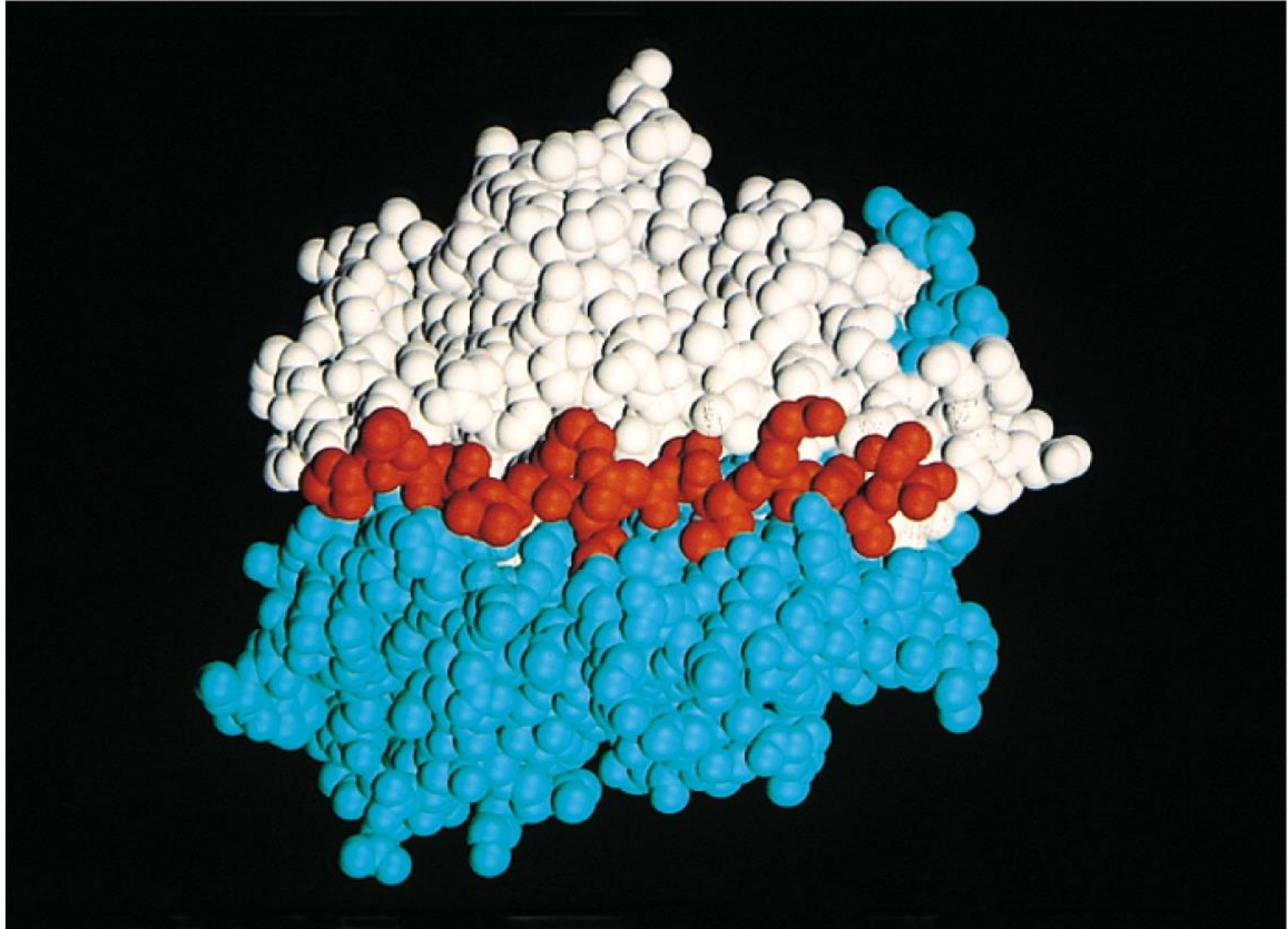
V = valine

Y = tyrosine

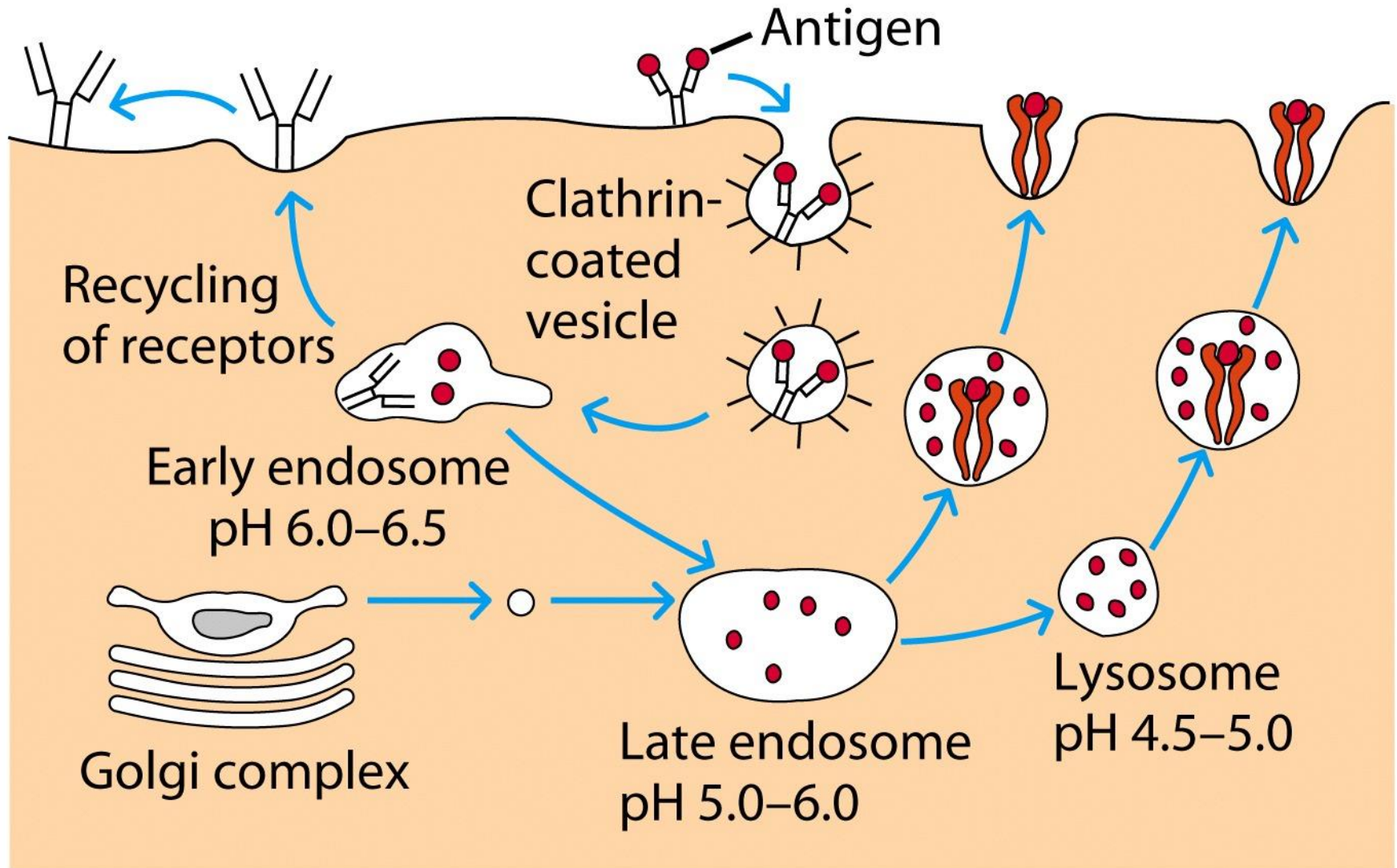


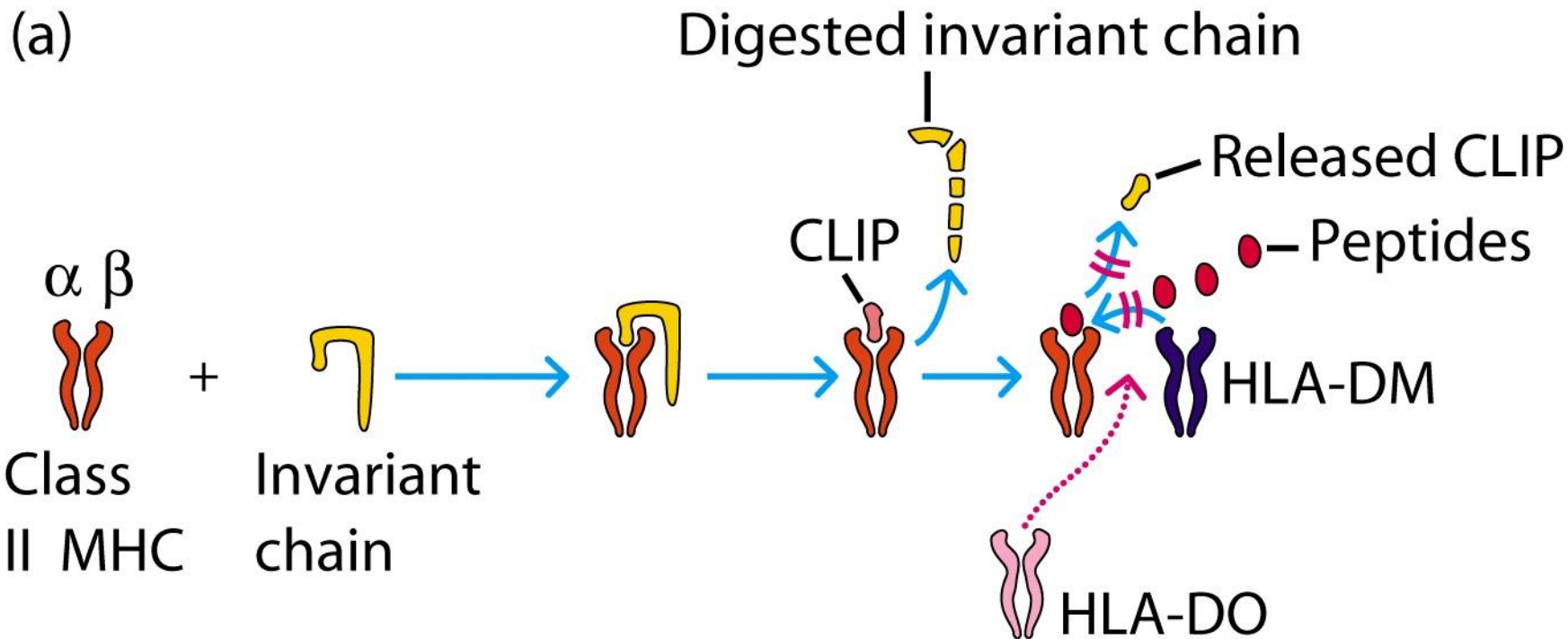


(b) **Class II MHC**



Exogenous antigen uptake, receptor bound (**endocytosis**) or soluble **phagocytosis, pinocytosis**)

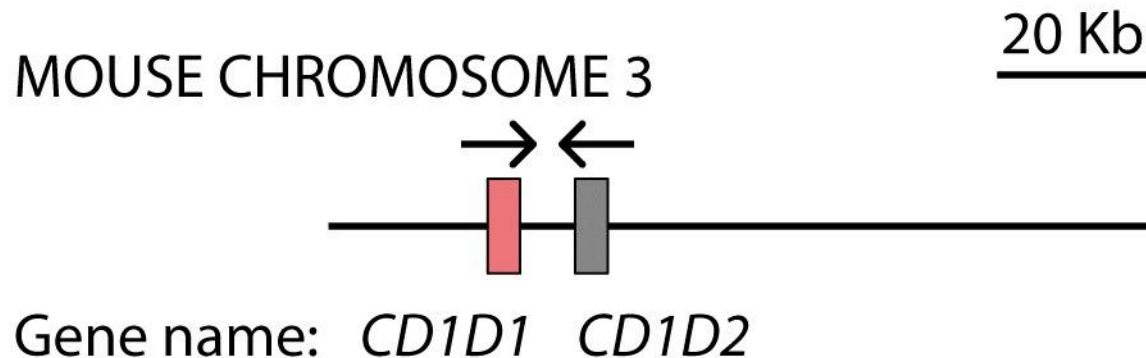
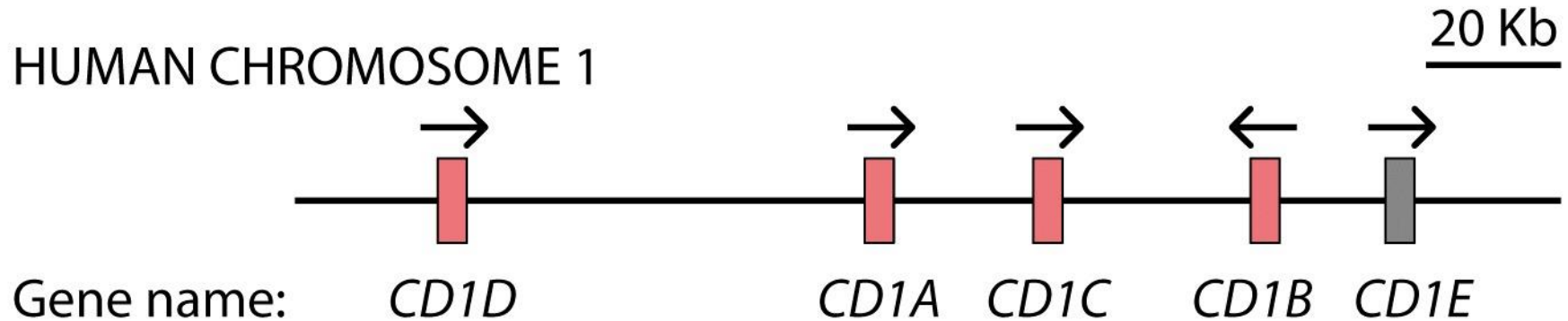




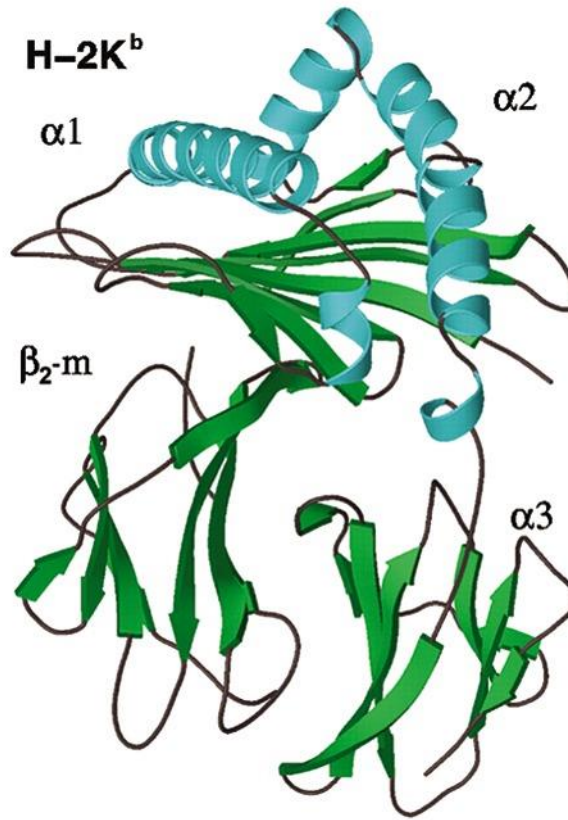
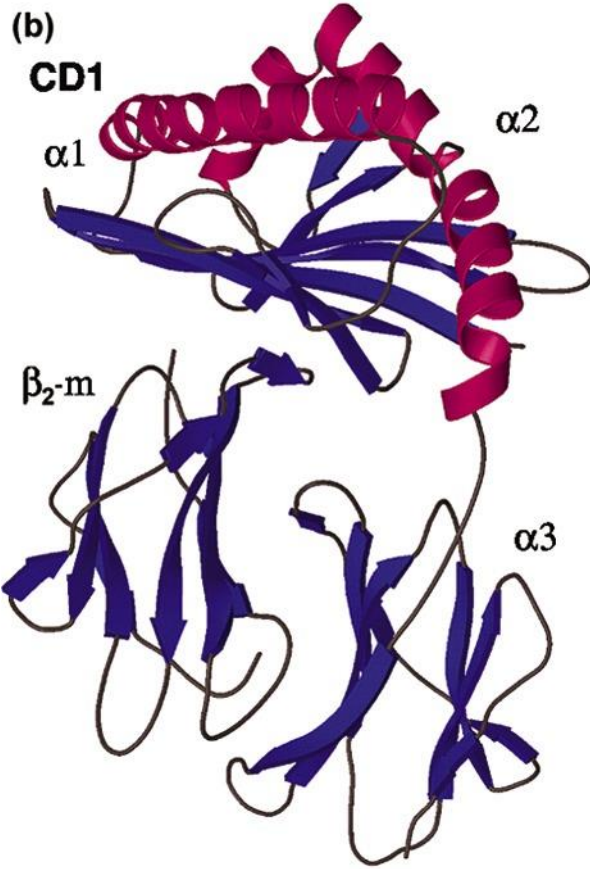
In addition to “classical” MHC-Class I molecules there are “non-classical” Class I molecules

CD1

Not encoded in the MHC



Not as polymorphic as MHC-Class I



Not encoded in the MHC

Encoded on the MHC

Very similar structure

Present glycolipids

Present peptides

Associated with $\beta_2\text{-m}$