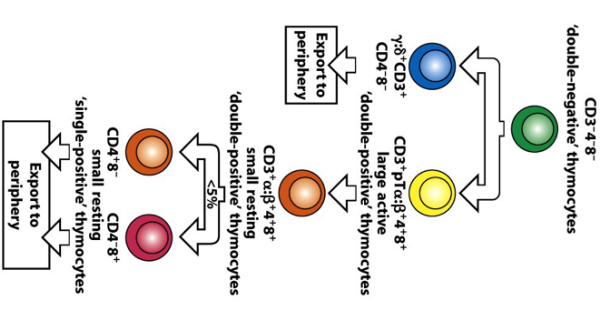
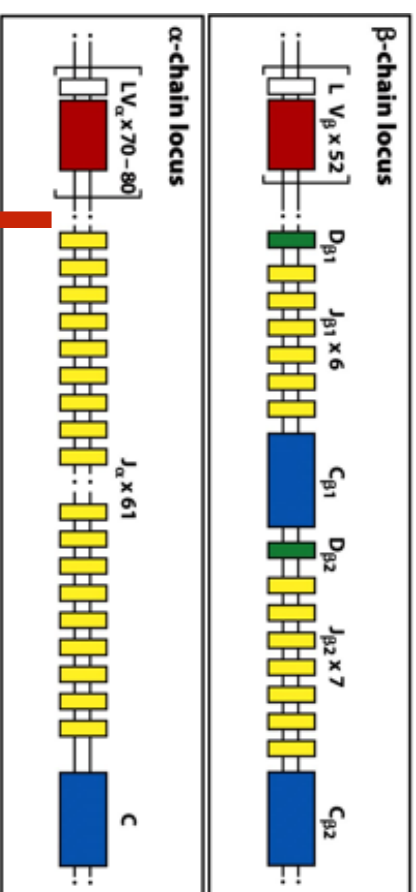


II - Cellules de l'immunité adaptative

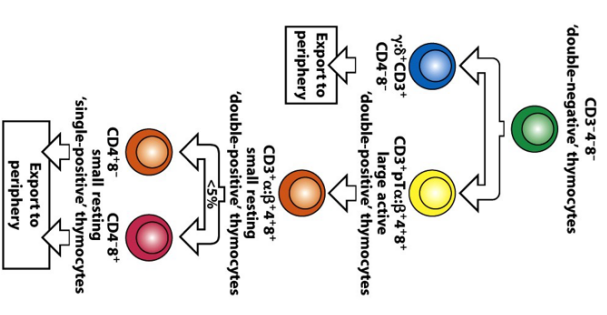
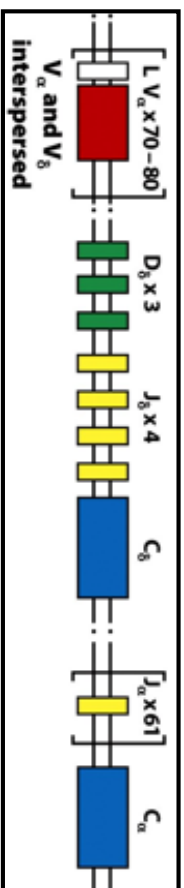
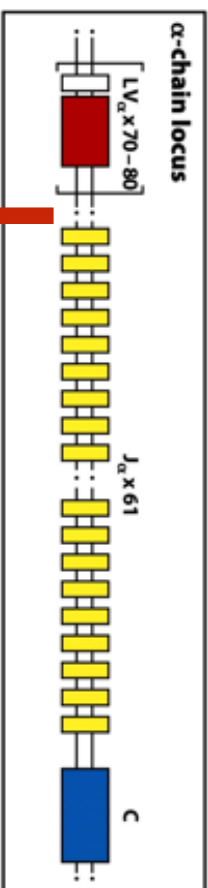
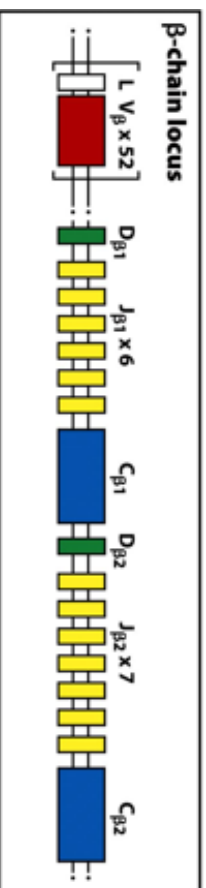
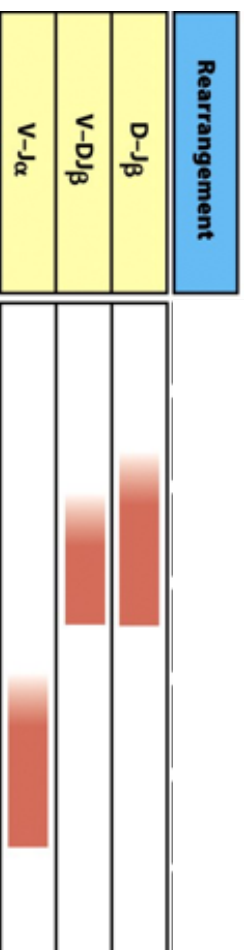
Lymphocytes $T_{\alpha\beta}$

Rearrangement	
D-J β	
V-DJ β	
V-J α	



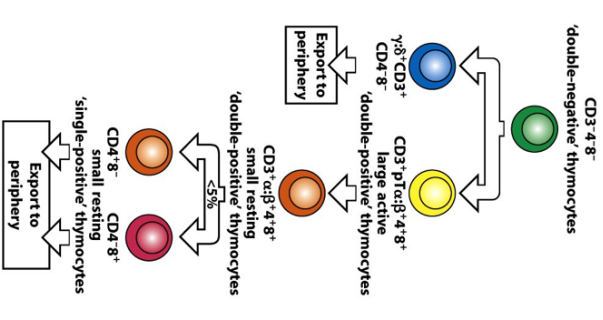
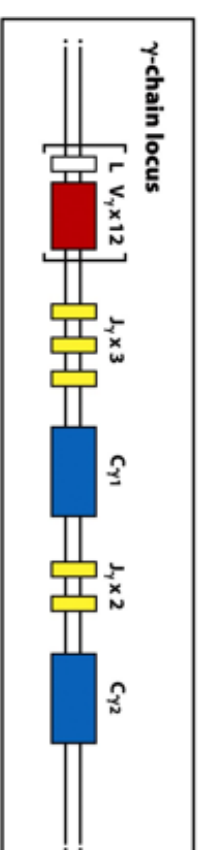
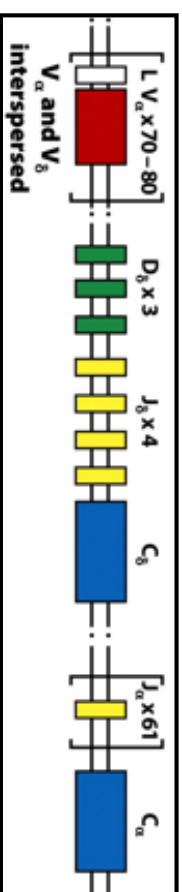
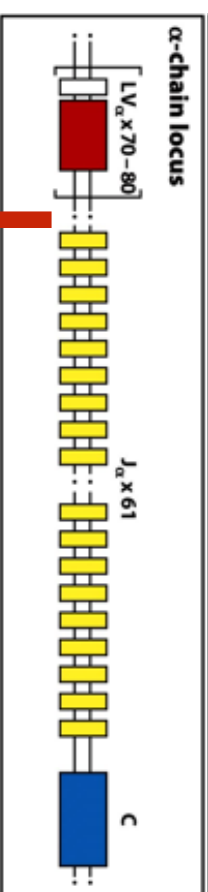
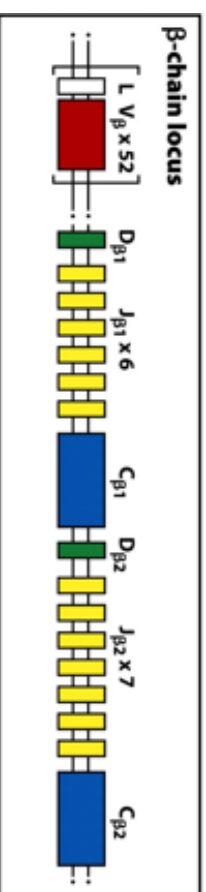
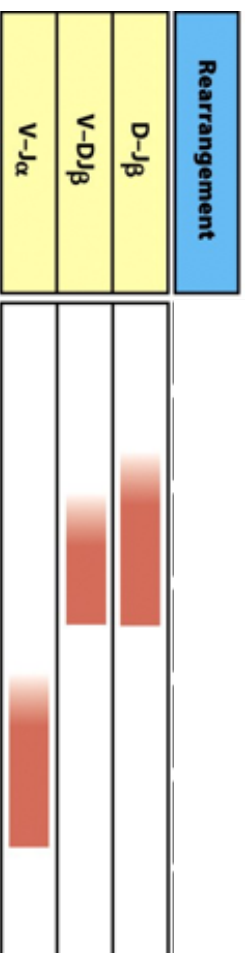
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$



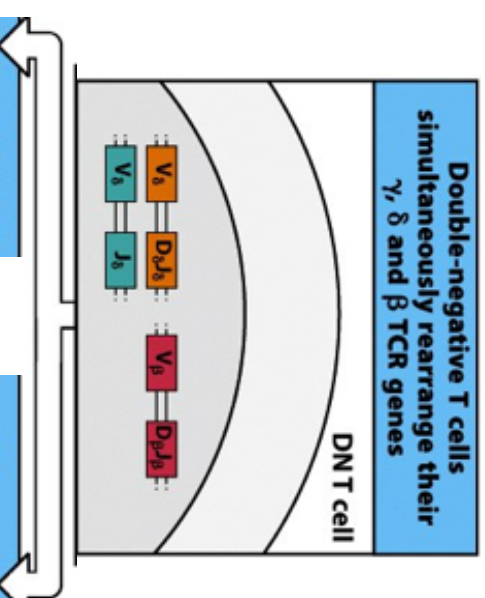
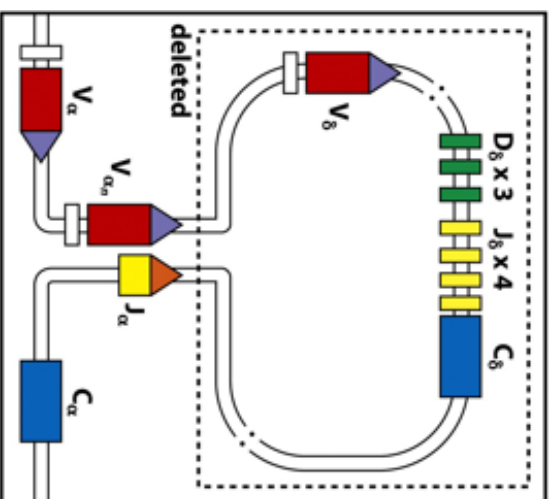
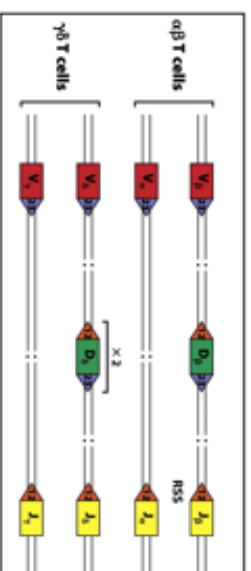
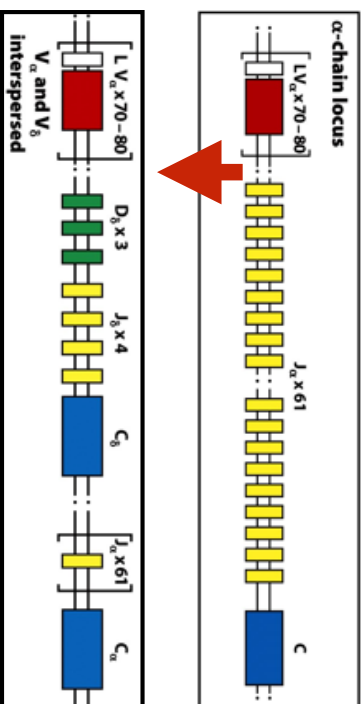
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$



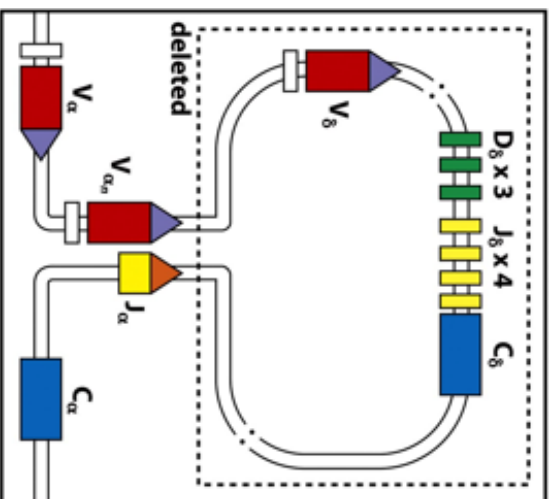
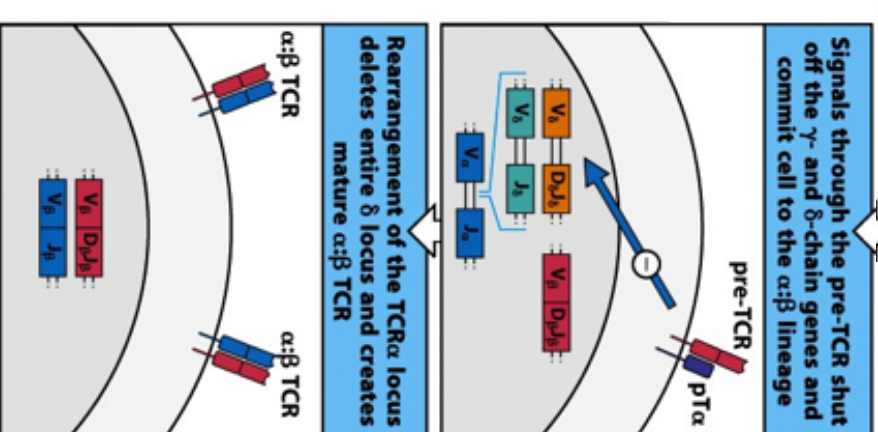
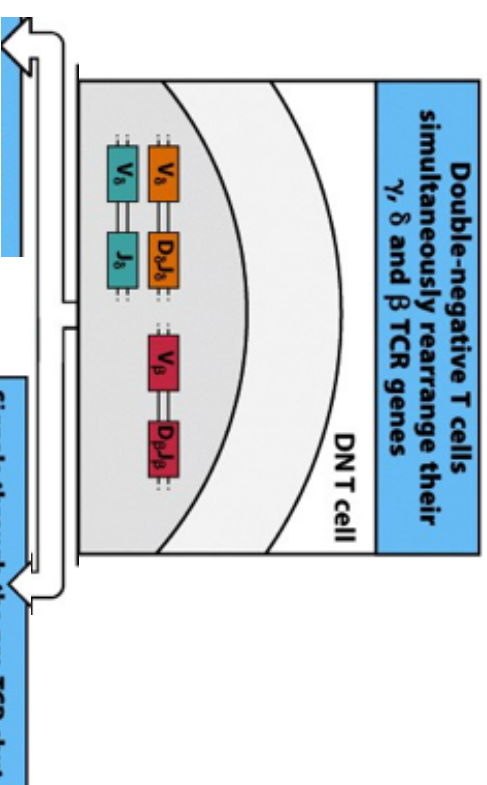
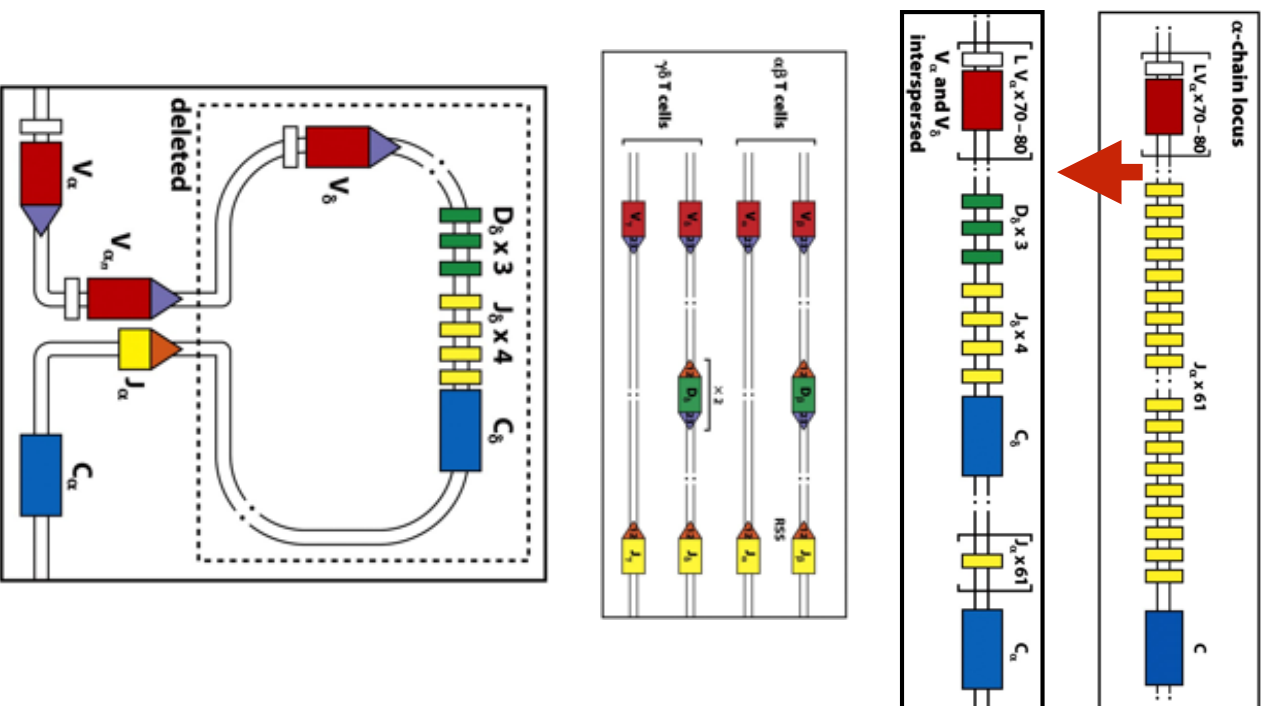
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$



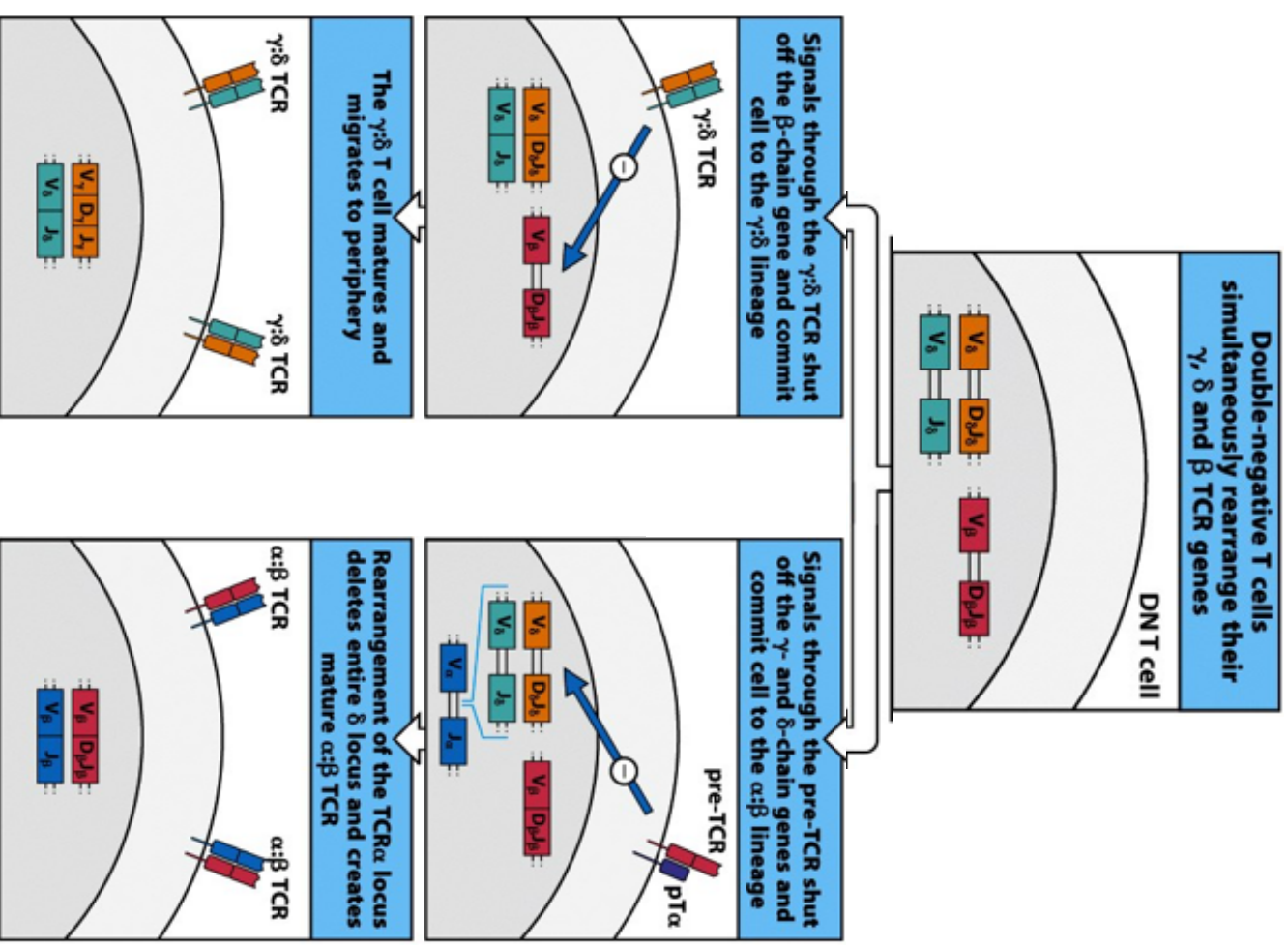
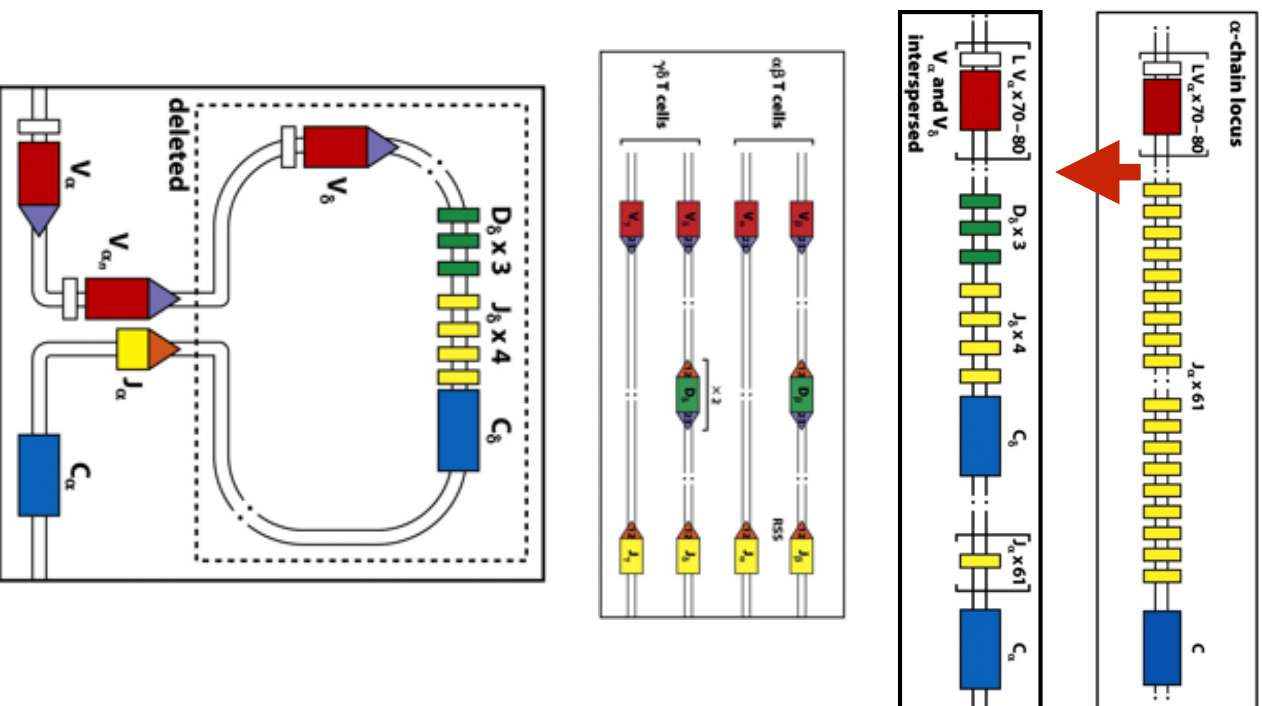
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$



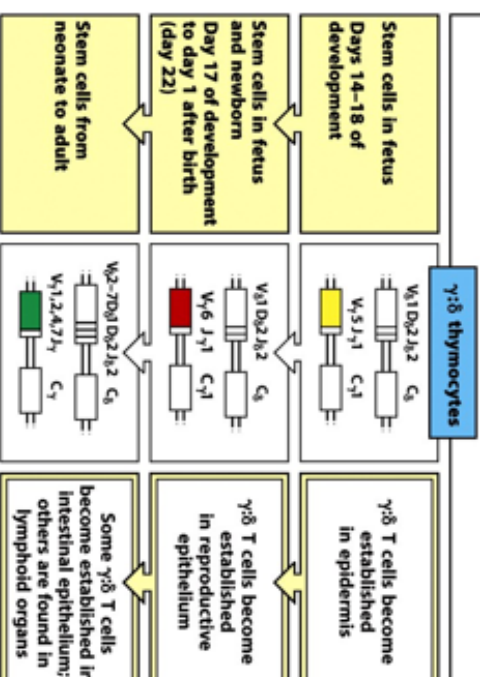
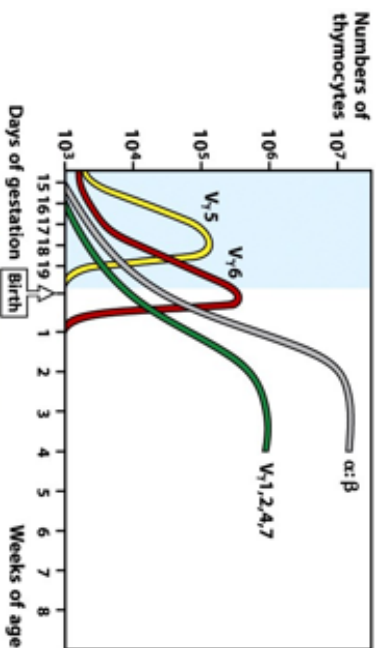
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$

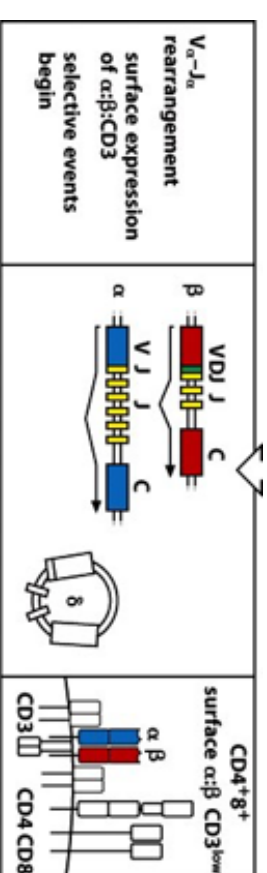
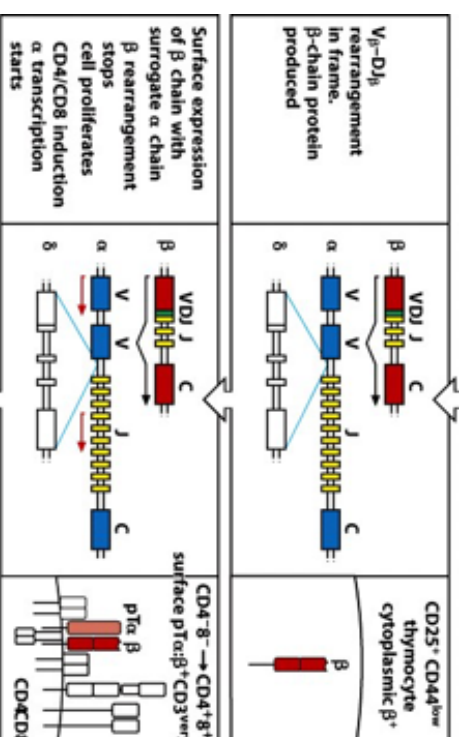


II - Cellules de l'immunité adaptative

Lymphocytes T $\alpha\beta$



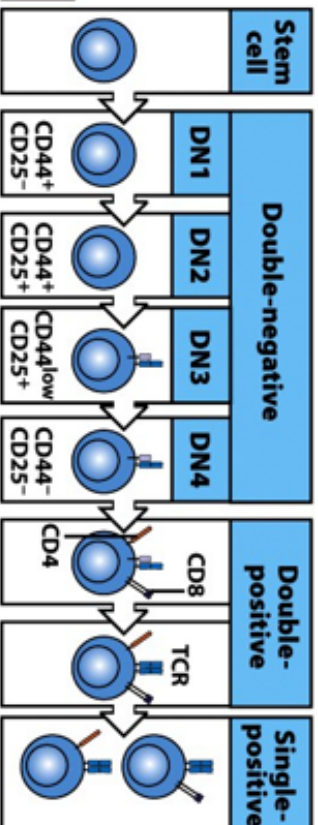
Process	Genome	Cell
Germine gene configuration		maturing CD4 ⁺ 8 ⁻ thymocyte
D β -J β rearrangement (γ - and δ -chain rearrangement may also occur)		CD25 ⁺ CD44 ^{low} thymocyte rearranging β -chain genes



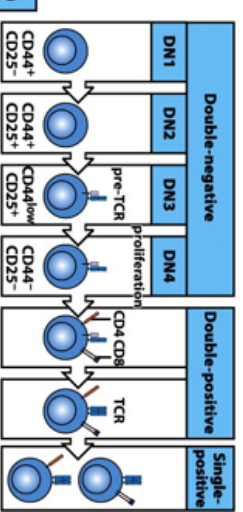
II - Cellules de l'immunité adaptative

Lymphocytes T $\alpha\beta$

Protein	Function	Stem cell	Double-negative	Double-positive	Single-positive
RAG-1	Lymphoid-specific recombinase				
RAG-2	N-nucleotide addition				
TdT	Surrogate α chain				
pT α	Signal transduction				
ZAP-70					
CD3					
Lck					
Fyn					
CD2	Transcription factor				
Ikaros					
GATA-3					
TCF1					
LKLF					
Th-Pok					

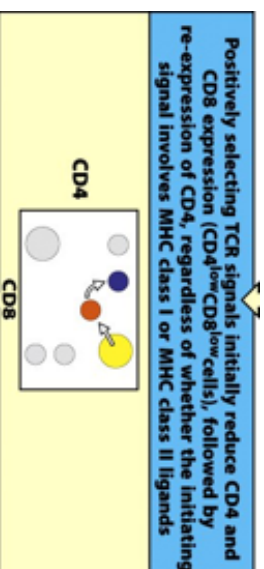
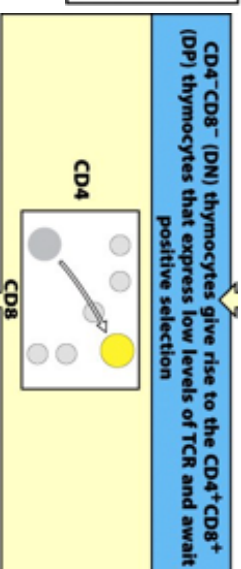
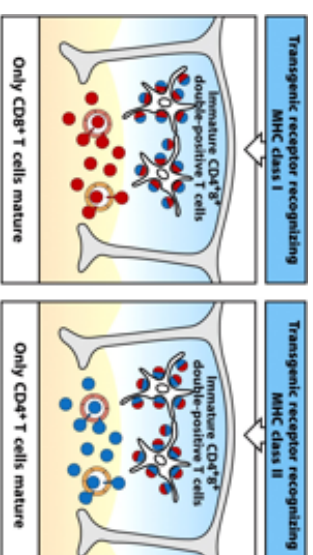
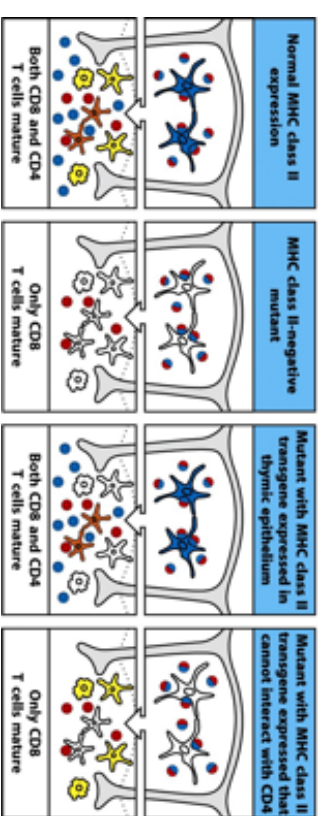
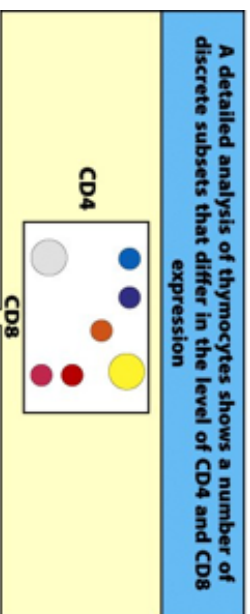
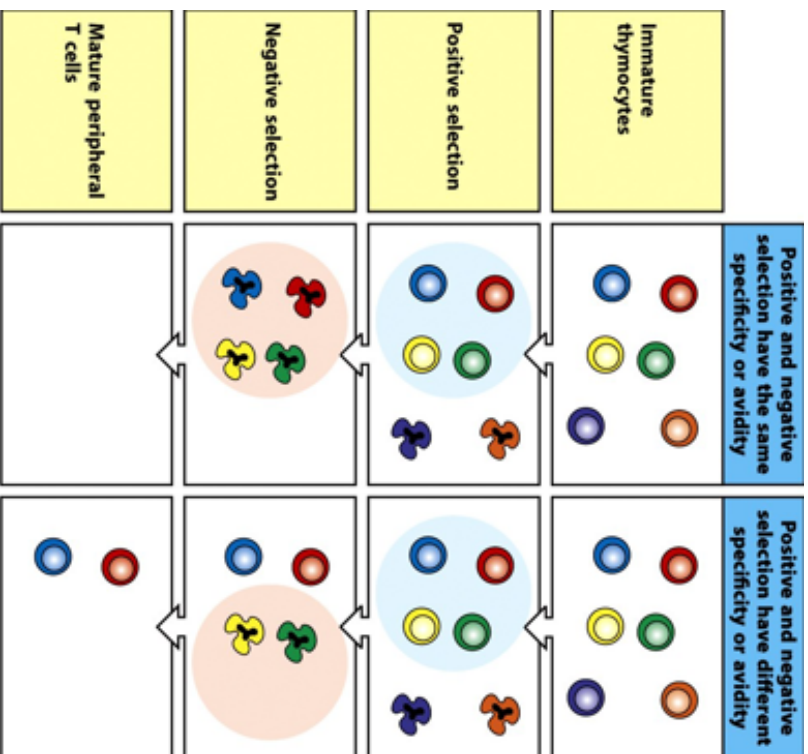


Surface molecule	Function	Double-negative	Double-positive	Single-positive
Kit	Signaling			
Notch	Signaling			
CD44	Adhesion molecule			
CD25	IL-2 receptor			
pT α	Surrogate α chain			
CD3	Signaling			
CD4	Co-receptor			
CD8				



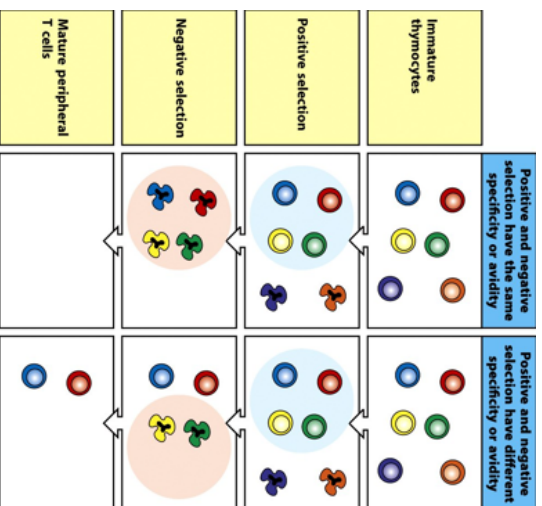
II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$: sélections positive et négative

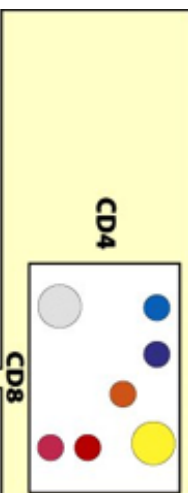


II - Cellules de l'immunité adaptative

Lymphocytes $T_{\alpha\beta}$: sélections positive et négative

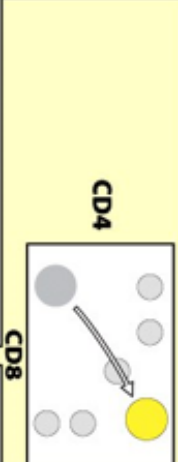


A detailed analysis of thymocytes shows a number of discrete subsets that differ in the level of CD4 and CD8 expression

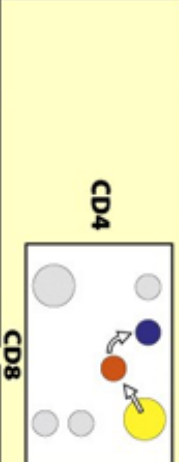


- CD4⁺ single positive
- CD4⁺ CD8^{low}
- CD4^{low} CD8^{low}
- CD4⁺CD8⁺ double positive (DP)
- CD4⁻CD8⁻ double negative (DN)
- CD4^{low} CD8⁺
- CD8⁺ single positive

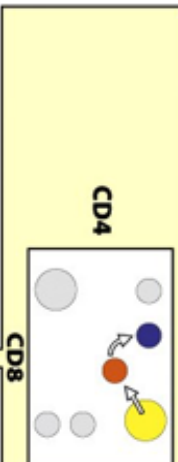
CD4⁻CD8⁻ (DN) thymocytes give rise to the CD4⁺CD8⁺ (DP) thymocytes that express low levels of TCR and await positive selection



Positively selecting TCR signals initially reduce CD4 and CD8 expression (CD4^{low}CD8^{low} cells), followed by re-expression of CD4, regardless of whether the initiating signal involves MHC class I or MHC class II ligands



Positively selecting TCR signals initially reduce CD4 and CD8 expression (CD4^{low}CD8^{low} cells), followed by re-expression of CD4, regardless of whether the initiating signal involves MHC class I or MHC class II ligands



The division of thymocytes into the CD4 or CD8 lineage occurs at this CD4⁺CD8^{low} stage, where transient expression of Th-POK leads to CD4 commitment, or its absence leads to CD8 commitment

