

[Somatic Recombination]

u-genetic segment (VDJ) C

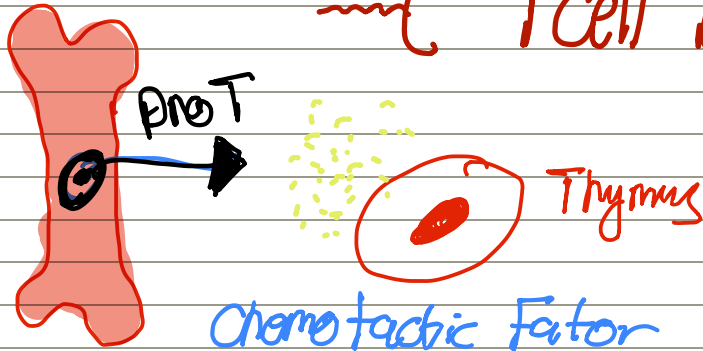
VDJ.C → β on T, heavy on B

VJ.C → α on T, light on B

① κ & λ families of **BCR** light & heavy chain

② C α , B for **TCR**

[T Cell Development]



BM

ProT (CD3⁺, CD4⁻, CD8⁻)

①

β chain expressed + PreT α

have a half Receptor

(PreT Cell) CD3, ζ Zeta ✓

② Cortex

PreT → immature T Cell (double positive)

α chain expressed
CD4 ✓, CD8 ✓

selection ⊕ in Cortex

③

⊖ Medulla ⇒ Mature T Cell

Medulla

← T transforming into single positive

④

CD4 → MHCII → TH

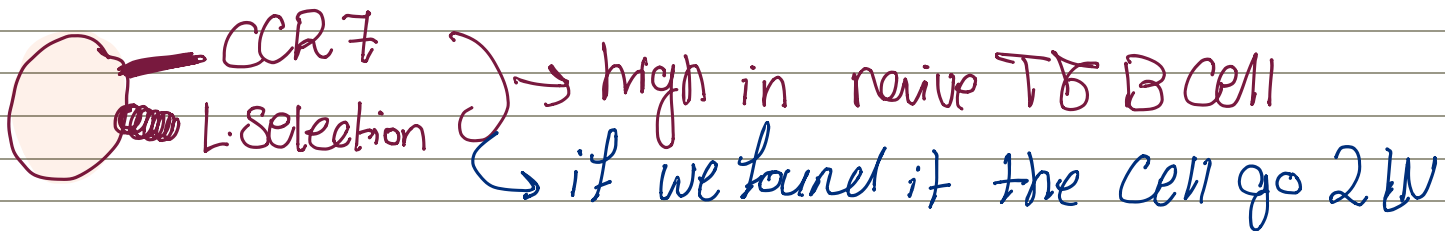
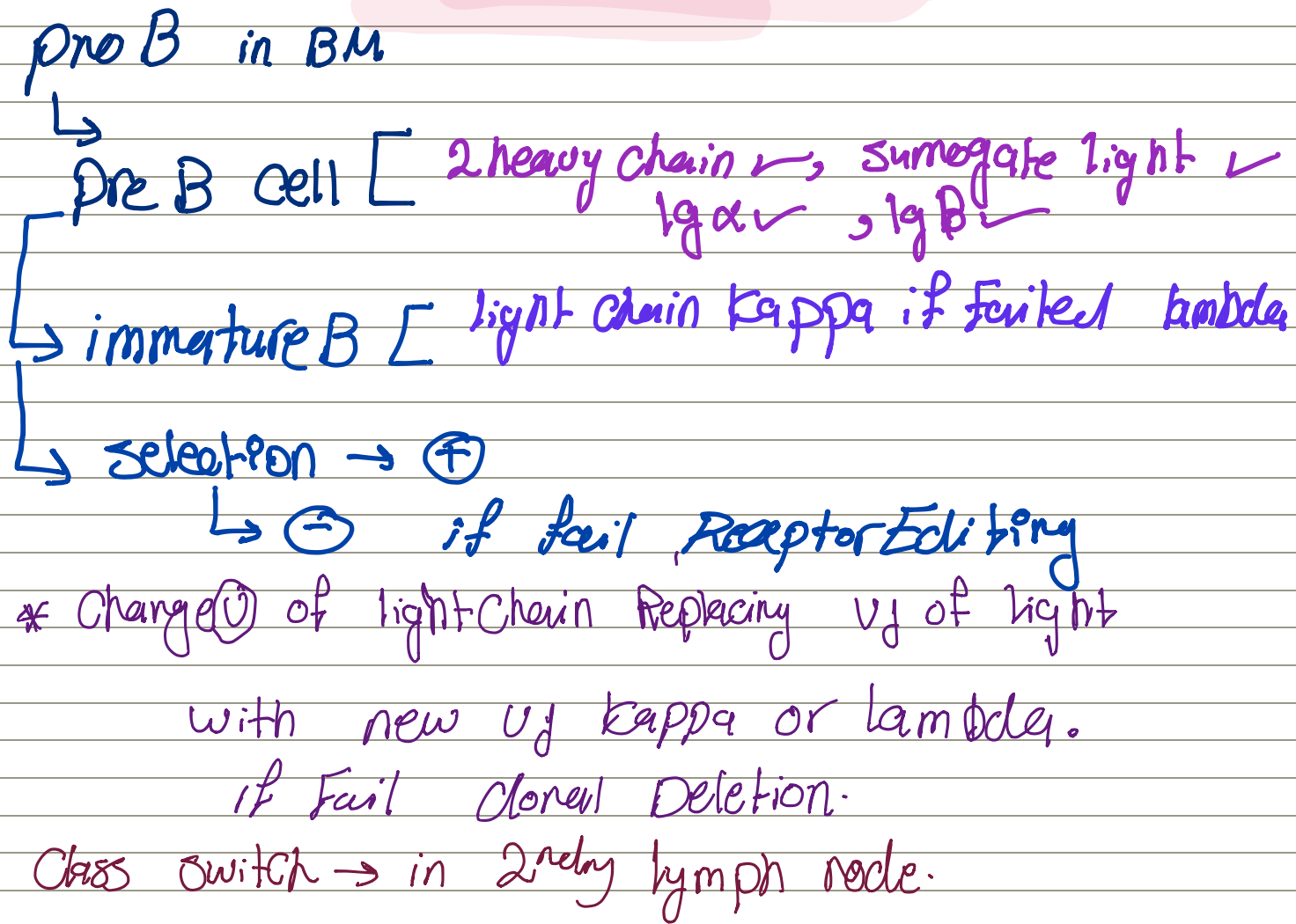
CD8 → MHCI → TC

* IL-12, IL-4 by Macrophage activate T cell

* IL-7 → proliferate of Pro B, Pro T

* CD4 activate B

B cell Development



NK cell

بتصل تشتغل لحد ماتجي T cell

against ① viruses ③ tumor cell
② intercellular Microbe

KIR & KAR \rightarrow NK
For MICA, MICB

(use IFN γ to killing) indirect.
(perforine + enzyme) Direct.
activated by IFN α , B

\rightarrow secreted by viral infected cell

(Inflammation)

Lymphocyte & Monocyte \rightarrow Agrenule
start with Macrophage & Mast.

Response to DAMPs & PAMPs

