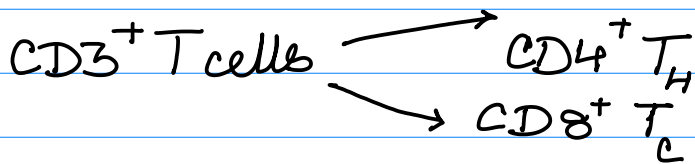


Day 9 (Immunology)

① T cells

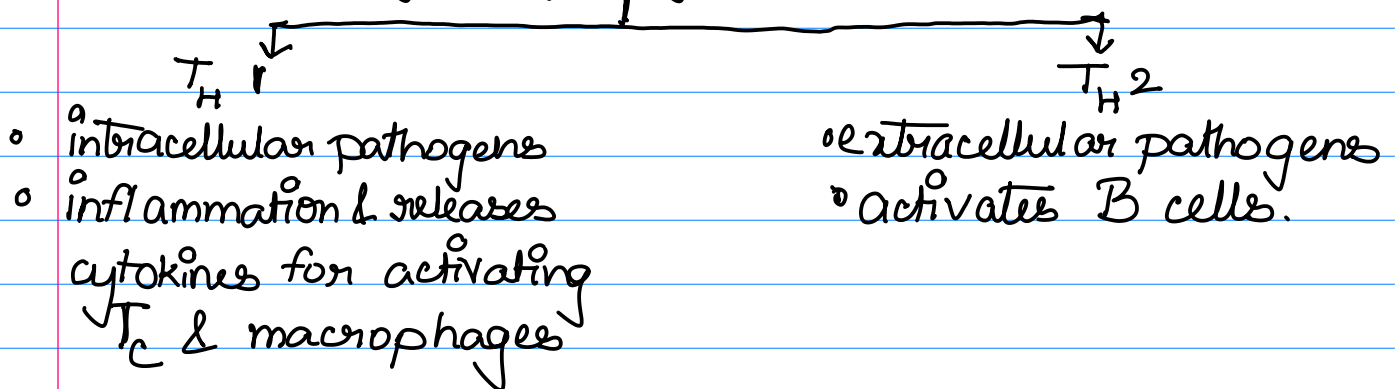
- develop from premature $CD3^+$ thymocytes in the paracortex of thymus



Why are $CD8^+$ T cells responsible for combating viral infections?

$CD8^+$ T_C cells recognise MHC Class-I molecules, which are expressed by all cells. T_C cells can therefore recognise antigen-MHCI complexes that are presented by virus-infected cells, since viruses are obligate intracellular pathogens.

- T_H cells recognising antigen-MHC complex



- $T_H-17 \rightarrow$ releases IL-17 & T_{FH} in germinal centers
- $T_{reg} \rightarrow$ from autoreactive T cells and regulates immune response.

Hematopoiesis

- HSC → all blood cells ⇒ hematopoiesis
- HSC → pluripotent cells
- early HSCs are found in yolk sac and fetal liver
- isolated as Lin⁻ & then purified as CD34 expressing cells

Stromal cells & microenvironment

- provide microenvironment to stem cells for differentiation into a particular lineage.
- e.g., macrophages, endothelial cells, epithelial cells, fibroblasts, a. ¹ocytes.
- need direct contact with stem cells to influence development
- within fetal liver, thymus, bone marrow, different stromal cells create different fcs → different cell types develop
- SCF, IL-1, IL-3 - required for differentiation of HSC into cell types

Thymus

- cortex & medulla
- thymus is responsible for development & selection of T cells in the paracortex
- there might be organs apart from thymus, responsible for T cell development
- thymosin, thymopoietin & cytokine for thymocyte → T cell