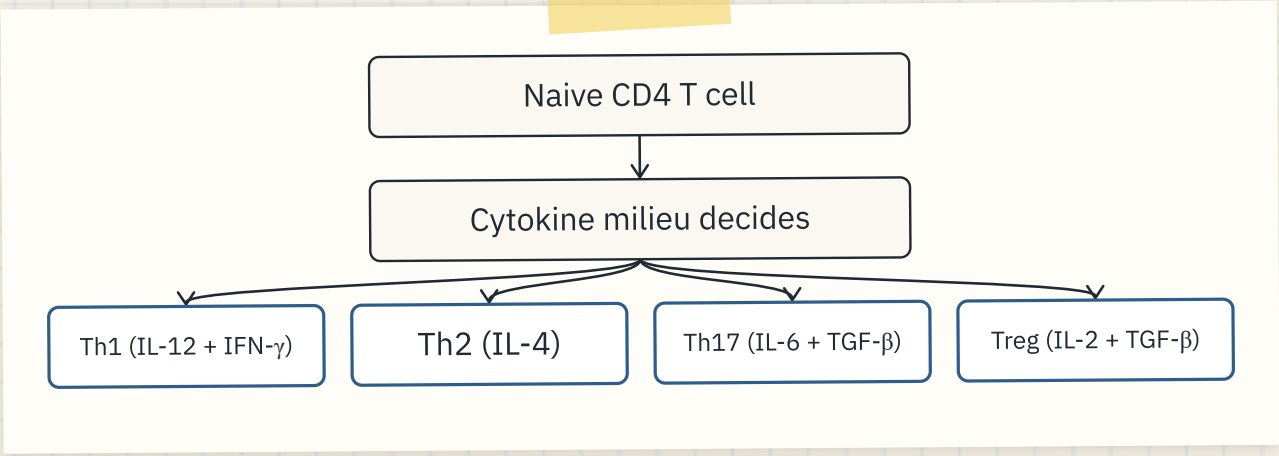
Helper T-cell subsets

Th1, Th2, Th17 and Treg at a glance



Step by step

1. Name the cytokines around the naive CD4 T cell.
2. Match them to the master factor: T-bet, GATA3, RORγt or FOXP3.
3. Read off the subset's product and the target it acts on.

THE PATTERN TO HOLD

Inducer → master factor → product → target

read it forwards (what makes it) or backwards (what a failure causes)

Subset	Inducer → factor	Product → target
Th1	IL-12 + IFN-γ → T-bet	IFN-γ → macrophages
Th2	IL-4 → GATA3	IL-4, 5, 13 → eosinophils, mast cells, IgE
Th17	IL-6 + TGF-β → RORγt	IL-17, 22 → neutrophils
Treg	IL-2 + TGF-β → FOXP3	IL-10, TGF-β → calms response

Subset chain

Three enemies, three subsets

Mycobacterium: Th1

Worm: Th2

Fungus: Th17

Exam traps

- Th1 and Th2 suppress one another, so a response tends to commit to one path.
- IPEX syndrome in boys comes from loss of FOXP3.
- STAT3 hyper-IgE syndrome: impaired Th17 cells, recurrent Staphylococcus aureus and Candida infections.

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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