Naive Th cells play a central role in modulating the immune response. They are activated by recognition of a peptide antigen bound to the class II major histocompatibility complex (MHC) on antigen-presenting cells (APCs) through the interaction with the T cell receptor. After activation, Th precursor (ThP) cells begin to divide and give rise to effector cells. These effector Th cells are CD4⁺ and can be divided into three main types with distinct cytokine secretions and functions: Th type 1 (Th1), Th type 2 (Th2), and most recently Th type 17 (Th17), expanding the group to what is now referred to as the Th1/Th2/Th17 paradigm.
The T helper (Th) cell paradigm

**Surface expression**
- IL-12Rb1
- IL-13Rα1
- IL-21R
- IL-23R
- CD25
- CD161
- FR4 (m)
- GITR/AITR
- CD84
- CXCR5

**Unique cytokine expression**
- IFNγ
- IL-4
- IL-5
- IL-17A
- IL-17F
- IL-21
- IL-22
- IL-23
- IL-24

**“Master regulator” transcription factors**
- T-bet
- GATA3
- RORγt
- Foxp3
- BCL6

**Stat regulators**
- STAT1
- STAT3
- STAT5

**Polarizing cytokines**
- IL-12
- IFNγ
- IL-27
- IL-4
- IL-15 (h)
- IL-25 (IL-17E)
- IL-4
- TGFβ
- IL-6
- TNFα

**Key**
- TCR
- CD3
- CD4
- CD8
- CD25
- CD161
- FR4 (m)
- GITR/AITR
- CD84
- CXCR5

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