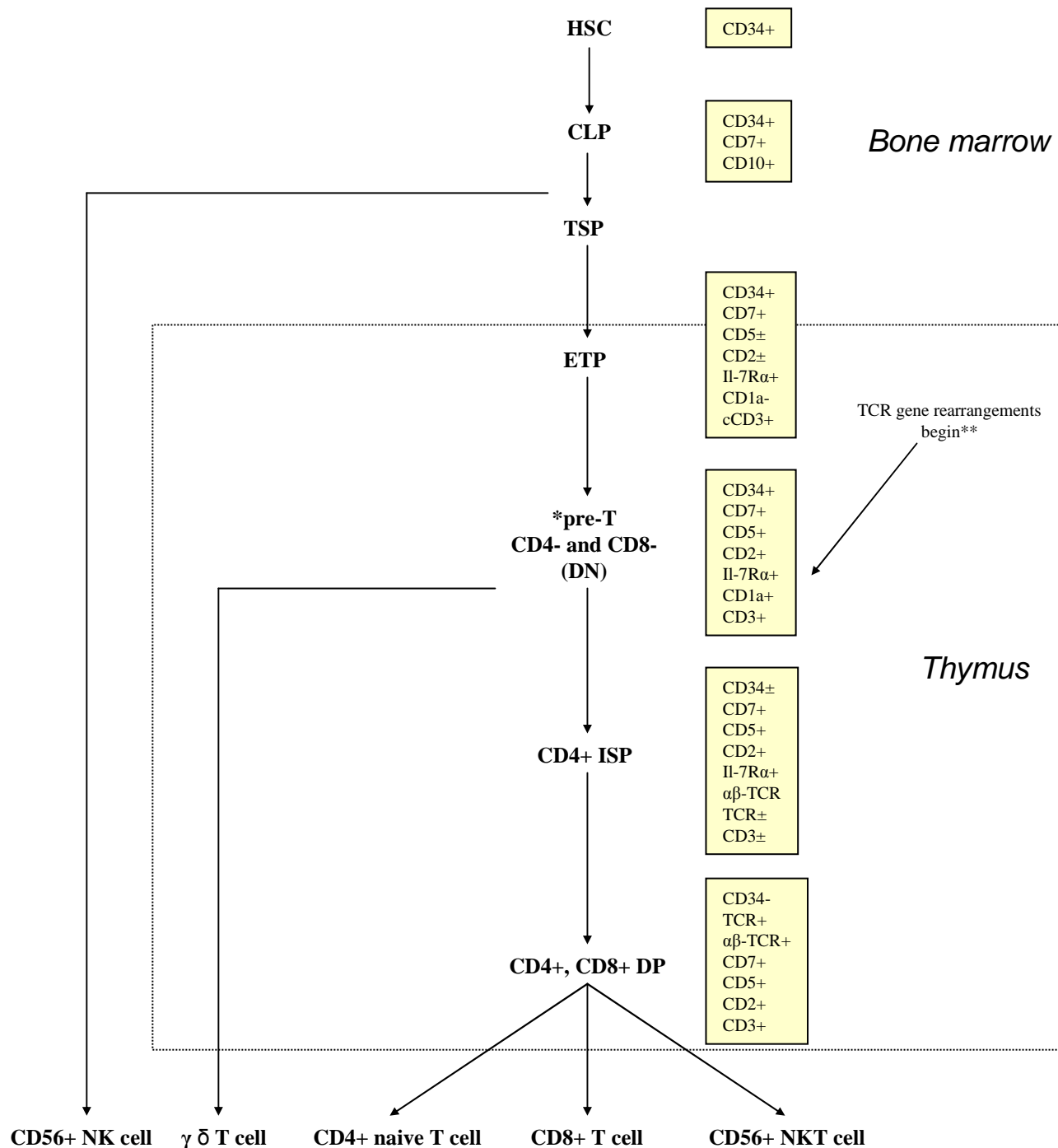


Normal Antigen-Independent Human T Cell Development as Defined by Immunophenotype



*pre-T cells are T cell-lineage committed

**TCR (T cell receptors) gene rearrangments occur in sequence: δ first, then γ, β, and α

Key:

HSC- hematopoietic stem cell
 CLP- common lymphoid progenitor
 TSP- thymus seeding progenitor (prothymocyte)
 ETP- early thymocyte progenitor
 cCD3- cytoplasm CD3
 ISP- immature single positive
 DP- double positive (CD4 and CD8)
 DN- double negative
 NK- natural killer

General References:

- Blom B, Spits H. Development of human lymphoid cells. *Annu Rev Immunol* 2006; 24:287-320
- Keren DF, McCoyd JP, Carey JL, eds. *Flow Cytometry in Clinical Diagnosis*. 3rd ed. Chicago (IL): ASCP Press 2001

Periphery