Negative selection of $\alpha:\beta$ T cells by dendritic cells, macrophages, and other cells in the thymus.
Stage in development

- **Proliferation and differentiation to double-positive CD3⁺ thymocytes**
  - sub-capsular region
  - cortex
  - cortico-medullary junction
  - medulla

Thymocyte location and characteristics

- Double-negative CD3⁻ thymocytes in the subcapsular zone

Positive selection

- Double-positive CD3⁺ thymocytes in the thymic cortex

Negative selection

- Double-positive CD3⁺ thymocytes throughout cortex and especially at the cortico-medullary junction

Entry to the circulation

- Mature self-restricted, self-tolerant, single-positive CD4 or CD8 T cells leave the thymus in blood venules

Figure 7.21 The Immune System, 3ed. (© Garland Science 2009)
Suppression of autoreactive T cells by regulatory T cells ($T_{reg}$) requires them to interact with the same antigen-presenting cell.