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# Thymic T-Cell Selection

National Cancer Institute

## Source

National Cancer Institute. *Thymic T-Cell Selection*. NCI Thesaurus. Code C19064.

Bone marrow-derived stem cells in the thymus become educated to recognize complexes of self-major histocompatibility complex (MHC) molecules plus self-peptides in a process called positive selection under the influence of epithelial cells in the thymic cortex. Positively-selected thymic T cell precursors (thymocytes) then progress through a process called negative selection under the influence of bone marrow-derived dendritic cells at the corticomedullary junction where self-reactive, and potentially autoimmunity-inducing, thymocytes are deleted. Thymocytes simultaneously progress through phases expressing both CD4 and CD8 coreceptors to a single positive stage expressing only CD4 or CD8 in addition to the T cell receptor. They are then allowed to leave the thymus and enter the periphery via the lymphatics or venules of the circulatory system as mature T cells.